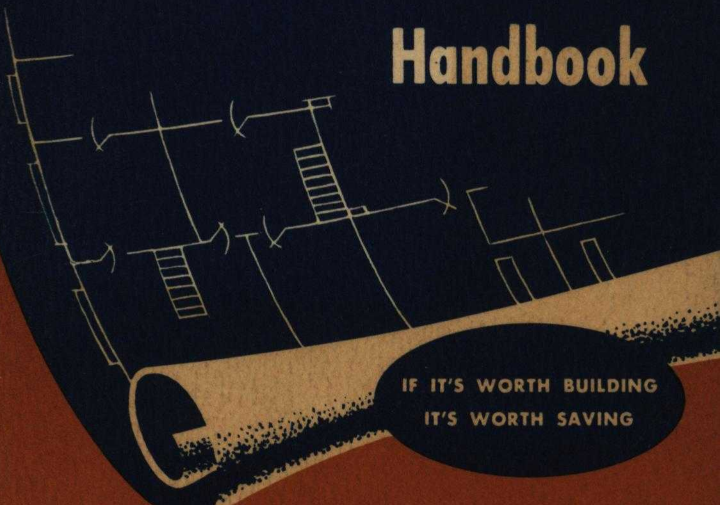
SONNEBORN

Building Construction and Maintenance Handbook



IF IT'S WORTH BUILDING
IT'S WORTH SAVING

SONNEBORN "BUILDING SAVERS"

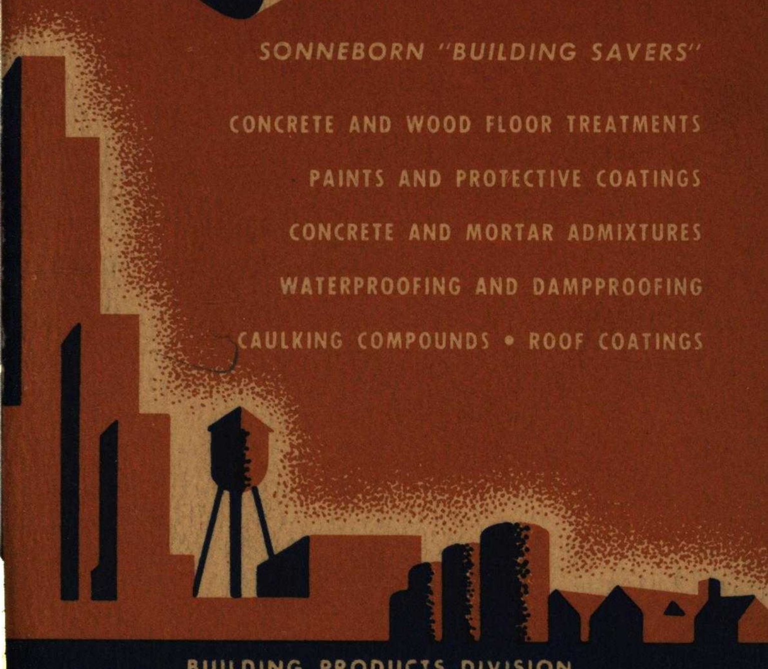
CONCRETE AND WOOD FLOOR TREATMENTS

PAINTS AND PROTECTIVE COATINGS

CONCRETE AND MORTAR ADMIXTURES

WATERPROOFING AND DAMPPROOFING

CAULKING COMPOUNDS • ROOF COATINGS



BUILDING PRODUCTS DIVISION
L. SONNEBORN SONS, Inc.
NEW YORK 11, N. Y.
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IN THE SOUTHWEST Sonneborn Bros., Dallas 1, Texas

SONNEBORN
Building Construction and Maintenance
HANDBOOK

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New York, N. Y., U. S. A.

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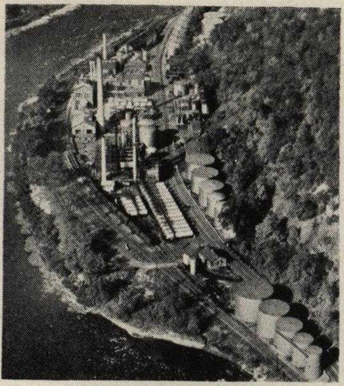
SONNEBORN

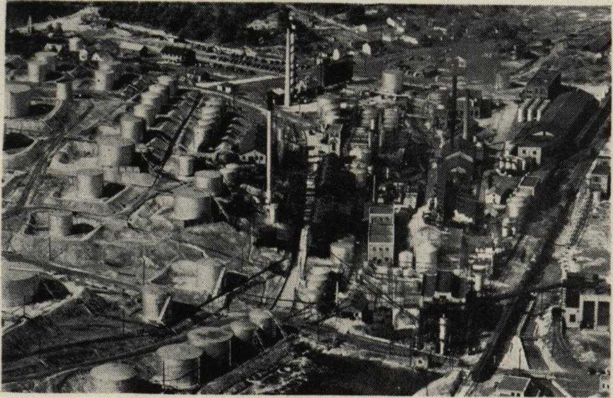
Pioneer in the Manufacture of Specialized Building Materials



Refinery—Franklin, Pa.

For nearly half a century, Sonneborn has been helping to solve basic problems in the fields of property, production, transportation and sales. As an oil refiner and manufacturing chemist, Sonneborn has had many years of experience in finding the right answer to problems which range from "weather-protecting" or "wear-protecting" a building to manufacturing an ointment, cold cream or insecticide, lubricating a fleet of trucks, or producing a better blanket.

Four divisions serve these basic problems of property, production, transportation and sales: Building Products Division, White Oil and Petrolatum Division. Amalie Lubricants Division and Textile Chemicals Division. All of these divisions are active throughout the United States and in many countries in South America and Europe.



Refinery—Petrolia, Pa.

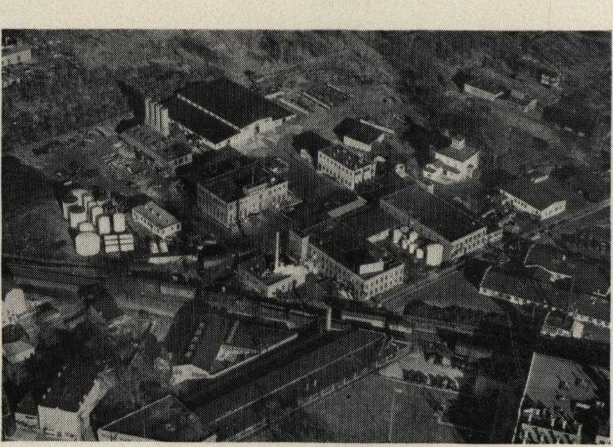
The Building Products Division, founded in the early part of this century, is today one of America's leading manufacturers of specialized quality building construction and maintenance materials.

Sonneborn "Building Savers"—each of which has been put to the test of many years of actual use—may be grouped under five general classifications:

- CONCRETE and WOOD FLOOR TREATMENTS (*including* WAXES)
- PAINTS and PROTECTIVE COATINGS
- CONCRETE ADMIXTURES, WATERPROOFING and DAMPPROOFING
- ROOF COATINGS
- CAULKING COMPOUND

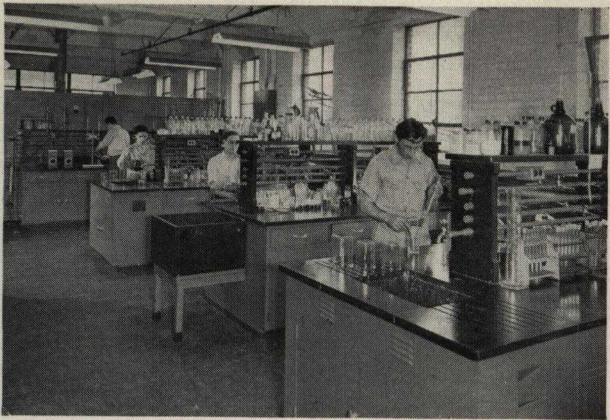
These products are used extensively in the construction of buildings of every type and design, and in the protection and maintenance of floors, walls, foundations, roofs and all exposed surfaces.

They are recommended and endorsed by leading architects, contractors and builders.



Plant—Nutley, N. J.

SONNEBORN SERVICE



Continuous research and testing in SONNEBORN laboratories assure product uniformity and excellence

A trained staff of Sonneborn engineers is ready to help you solve any building construction or maintenance problem with which you may be confronted. Spotted at strategic points throughout the country, the members of this staff can supply you with engineering data and specifications and assist you in many practical ways.

A group of highly skilled building technicians—with broad and varied experience on literally thousands of projects, involving every industry, every variation in climate and every condition—also stands ready to give you the benefits of its counsel and guidance.

Plant and Service Facilities

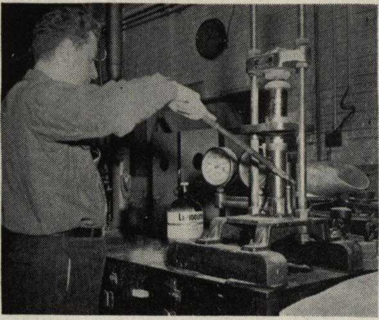
Sonneborn "Building Savers" are manufactured, packed and shipped from a smooth-functioning, fully equipped plant at Nutley, N. J., which is readily accessible to both rail and water transportation facilities.

A country-wide network of Sonneborn sales offices and Distributors assure prompt delivery and service.

Advertising and Sales Promotion

The story of Sonneborn "Building Savers" is carried to all types of prospects including architects, engineers, contractors, builders, maintenance executives and others—through leading trade publications.

Colorful and hard-hitting sales literature, displays, counter cards and other promotional material are available through the Home Office or Distributors.


Testing compressive strength of cement

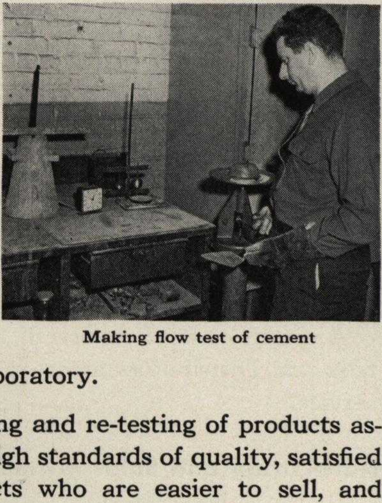
Technical bulletins pointing out new advantages and new uses for individual "Building Savers" are also issued periodically.

Leading architects and building contractors are kept informed, through a continuous service, of the specific ways in which "Building Savers" can make construction work easier, more economical and longer lasting.

Research Laboratories

The Building Products Division maintains a highly trained research and technical staff to assist in the solution of special problems in building construction and maintenance.

A modern and fully equipped laboratory, staffed by experienced chemical engineers and technicians, is also maintained by the division. The development of new materials and the improvement of existing products are the major objectives of this laboratory.


Making flow test of cement

Systematic testing and re-testing of products assure consistently high standards of quality, satisfied customers, prospects who are easier to sell, and repeat orders.

LAPIDOLITH

(Patented in U. S. and Great Britain)

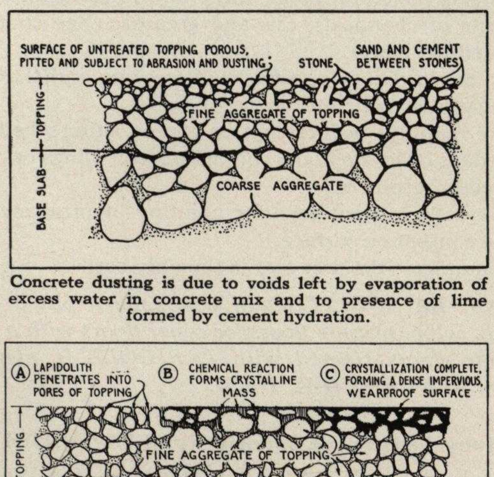
The Liquid Concrete Hardener that cannot be copied

USE

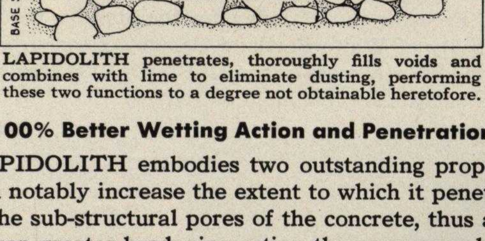
For hardening and dustproofing concrete and terrazzo floors, and vertical concrete surfaces in oil storage tanks, silos, wainscoting and supporting columns.

DESCRIPTION

LAPIDOLITH is a colorless solution of low surface tension containing a chemically active concrete hardening agent. When applied to concrete or terrazzo floors, LAPIDOLITH penetrates into the concrete, reacts chemically with the free lime and calcium carbonate in Portland cement and binds the loose particles into a closely grained, granite-hard vitreous topping so that constant heavy traffic and trucking cannot tear the cement from its bedding. The LAPIDOLITH treatment is equivalent to the slow process of infiltration of mineral salts by which soft clays are petrified to the condition that we know as flint. Laboratory tests show that Lapidolized floors are as much as ten times harder than untreated concrete floors, depending on the design of the concrete.


SURFACE OF UNTREATED TOPPING POROUS, PITTED AND SUBJECT TO ABRASION AND DUSTING
STONE
SAND AND CEMENT BETWEEN STONES
TOPPING
FINE AGGREGATE OF TOPPING
BASE SLAB
COARSE AGGREGATE

Concrete dusting is due to voids left by evaporation of excess water in concrete mix and to presence of lime formed by cement hydration.


Ⓐ LAPIDOLITH PENETRATES INTO PORES OF TOPPING
Ⓑ CHEMICAL REACTION FORMS CRYSTALLINE MASS
Ⓒ CRYSTALLIZATION COMPLETE, FORMING A DENSE IMPERVIOUS, WEARPROOF SURFACE
TOPPING
FINE AGGREGATE OF TOPPING
BASE SLAB
COARSE AGGREGATE OF SLAB

LAPIDOLITH penetrates, thoroughly fills voids and combines with lime to eliminate dusting, performing these two functions to a degree not obtainable heretofore.

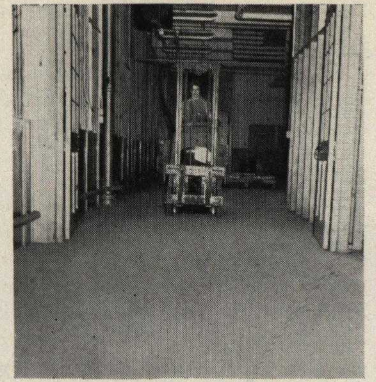
100% Better Wetting Action and Penetration

LAPIDOLITH embodies two outstanding properties which notably increase the extent to which it penetrates into the sub-structural pores of the concrete, thus assuring even greater hardening action than was ever before possible.

1. LAPIDOLITH has a wetting action that is 100% better than that of other floor hardening solutions of the

same concentration. This means deeper penetration — more thorough hardening.

2. The higher wetting action assures a more effective reaction with the concrete because LAPIDOLITH reaches down into the tiny voids which ordinary hardeners cannot penetrate. This effective penetration overcomes the "blocking off" caused by reaction products which ordinary hardeners deposit on the surface.


Lapidolized floors withstand heavy-duty traffic and wear, as shown in the Cushman-Chuck Company plant above.

ADVANTAGES

- Dustproofs concrete and terrazzo floors.
- Wearproofs concrete and terrazzo floors.
- Protects concrete floors, walls and tanks against the effects of chemicals, oils and greases. (See chart on preceding page.)
- Minimizes damaging effects of freezing and thawing.
- Strengthens concrete wainscoting.
- Easy to apply—no interruption of production schedules.
- Hardens concrete floors containing iron filings or other special aggregates.
- Provides excellent base for painting—neutralizes free lime content on surface.
- Economical—the first cost is the only cost.

NOTE: *LAPIDOLITH will not make a pitted floor smooth, color concrete floors, or cover floors with a film. Concrete floors treated with LAPIDOLITH may be painted with CEMCOAT F & D.*

Many Tests Prove Superiority of LAPIDOLITH

Actual laboratory tests — for Hardness, for Wetting Ability, for Penetration, for Water-Permeability, for Protection Against Oils, for Protection Against the Effects of Freezing and Thawing, for Maintaining the Light Reflectivity of White Portland Cement—clearly demonstrate the effectiveness of the LAPIDOLITH treatment. Details of tests are available on request.

This photograph shows a concrete block which was immersed in Oleic Acid for 10 weeks. The left part of the concrete block was treated with LAPIDOLITH and shows no change. The right part was left untreated and shows the destructive action of Oleic Acid on concrete.

APPLICATION

SPECIAL NOTES: *If at any stage of the LAPIDOLITH application to a concrete floor or an old terrazzo floor, the formation of a white sediment is observed on the surface, scrub floor with hot water, using a stiff brush, and stop further application. The formation of white sediment is an indication that the floor is saturated and the use of additional LAPIDOLITH is unnecessary. In applying LAPIDOLITH to all types of concrete and terrazzo surfaces, care should be exercised to prevent the solution from coming in contact with metal or with painted surfaces. Should any of the LAPIDOLITH solution get on such surfaces, they should be first wiped down with a water-saturated cloth, and then wiped dry with clean cloth.*

1—Uncolored Concrete Floors

Surface to be treated must be dry, clean, and free of dust, oil or paint. New concrete surfaces must be thoroughly set and dry.

The use of a wooden bucket for flushing LAPIDOLITH on the floor is recommended. Three applications are necessary:

First Application:

Prepare solution of 1 part LAPIDOLITH to 2 parts water. Flush solution on floor and distribute with long-handled brush. Mop up excess solution. Allow floor to dry before second application. (Best results are obtained when floor is allowed to dry for 24 hours.)

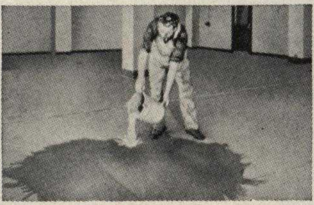
Second Application:

Prepare solution of 1 part LAPIDOLITH to 1 part water. Follow directions as in first application.

Third Application:

Prepare solution of 2 parts LAPIDOLITH to 1 part water. Follow directions as in first application. After surface has dried (2 to 3 hours after application), flush with water and allow to dry for 24 hours.

EASY TO USE



Flush LAPIDOLITH—diluted as per directions—on the concrete just as you would water. Floors can be kept in use during and after application.

Spread LAPIDOLITH with a long-handled brush or broom until floor is thoroughly and evenly saturated.

Scratch test shows how Lapidolizing wear-proofs concrete.

2—Integrally Colored Concrete Floors

Surface to be treated must be dry, clean, and free of dust, oil or paint. New floors must be thoroughly set and cured. Three applications are usually necessary, except on dense floors where only one or two applications may be required.

First Application:

Prepare solution of 1 part LAPIDOLITH to 3 parts water. Flush solution on floor and distribute with long-handled brush or squeegee. *Caution:* Do not allow LAPIDOLITH solution to dry, but while floor is moist, flush with water and mop clean. Allow to dry. (Best results are obtained when floor dries for 24 hours.)

Second and Third Applications:

Follow directions as in first application. After last application has dried, buff floor with electric polishing machine, padding brush with No. 2 steel wool.

3—Residential Floors

In applying LAPIDOLITH to residential concrete floors (basements, garages, etc.) follow directions as in 1 or 2, depending on type of floor. Care should be taken that the LAPIDOLITH solution is not tracked into other rooms. If the solution comes into contact with furniture, glass, wood floors, etc., such surfaces should be instantly washed down with warm water and wiped dry with clean cloth.

4—Old Terrazzo Floors

Surface must be clean, dry, and free of dirt, oil or grease. Three applications are necessary, as follows:

First Application:

Prepare solution of 1 part LAPIDOLITH to 3 parts water. Flush solution on floor and distribute with long-handled brush. *Caution:* Do not allow LAPIDOLITH solution to dry, but while floor is moist, flush with water and mop clean. Allow to dry before second application. (Best results are obtained when floor is allowed to dry for 24 hours.)

Second and Third Applications:

Follow directions as in first application.

5—Wood-Floated or Broom-Finished Concrete Floors

The great majority of concrete floors are finished smooth by steel troweling. However, for heavy-duty purposes (shipping platforms, ramps, etc.) instead of the steel troweling, a final wood floating or broom sweeping is often specified.

Where a floor has been finished in this manner, the usual three applications of LAPIDOLITH will satisfactorily harden the floor in most cases. However, because of the greater tendency of wood-floated or broom-swept floors to dust under traffic, a fourth application of LAPIDOLITH may sometimes be indicated. In such cases, the fourth application of LAPIDOLITH is applied undiluted 24 hours after third application, using 1 gal. per 150 sq. ft.

(Complete directions available for application of LAPIDOLITH to vertical concrete surfaces and new terrazzo floors.)

POISON—Must not be used Internally

KEEP FROM FREEZING

COVERAGE

Uncolored concrete floors: 1 gal. per 100 sq. ft., 3 applications. Colored concrete floors: 1 gal. per 150 sq. ft., 3 applications. New and old terrazzo floors: 1 gal. per 150 sq. ft., 3 applications. These figures are for floors of average porosity and regularity.

CONTAINER SIZES

50 gal. wooden barrel, 30 gal. wooden barrel, 20 gal. wooden keg, 10 gal. wooden keg, 5 gal. wooden keg, 5 gal. glass carboy, 1 gal. jug (4 per case).

How LAPIDOLITH Protects Against Oils and Chemicals

ACIDS	Effectiveness of LAPIDOLITH			ALKALIES	Effectiveness of LAPIDOLITH 100%	SALTS	Effectiveness of LAPIDOLITH		OILS	Effectiveness of LAPIDOLITH		MISCELLANEOUS	Effectiveness of LAPIDOLITH 100%
	100%	75%	30%				100%	50%		100%	50%		
Coal Tar	✓			Sodium Hydroxide	✓	Barium Chloride	✓		Kerosene	✓		Soap Solutions	✓
Cresylic	✓			Potassium Hydroxide	✓	Calcium Chloride	✓		Fuel Oils	✓		Fats	✓
Naphthenic	✓			Ammonium Hydroxide	✓	Magnesium Chloride	✓		Mineral	✓		Sea Water	✓
Picric	✓					Sodium Chloride	✓		Turkey Red	✓		Coal Tar Solvents	✓
Boric	✓					Ammonium Chloride	✓		Cocoanut		✓	Sugar Solutions	✓
Carbolic	✓					Ammonium Nitrate	✓		Vegetable	✓		Syrups	✓
Acetic (10%)		✓				Magnesium Sulphate	✓		Fish	✓			
Butyric (10%)		✓				Sodium Acid Phosphate	✓						
Citric (10%)		✓				Sodium Thiosulphate	✓						
Lactic (10%)		✓				Sodium Hypochlorite	✓						
Propionic (10%)		✓				Iron Chloride		✓					
Tartaric (10%)		✓				Aluminum Chloride		✓					
Sulphuric Concentrated			✓										

CEMCOAT F & D

Filler and Dustproofer—Floor and Deck Enamel of Superior Quality for Cement and Wood Floors

USE

For protecting and decorating all interior and exterior cement and wood floors, porches and decks; also for dado painting.

DESCRIPTION

CEMCOAT F & D is a specially formulated oil-base coating which, unlike ordinary floor paints, is designed to give maximum penetration. It not only dries to a smooth, dustless and highly decorative finish, but also "builds up" a protective coating of unusual toughness and durability. Withstands ordinary mechanical abuse and other causes of dusting, wear and deterioration. Blends harmoniously with walls and other painted room surfaces.

COLORS

Available in Black, Transparent, Battleship Gray, G. M. Gray, Maroon, Dark Brown, Green, Brick Red, Gray, and Autumn Brown.

Prime Floors Subject to Ground Moisture with CEMCOAT F & D 273

CEMCOAT F & D 273 is a chemically inert, alkali-resistant primer for sealing interior and exterior concrete floors laid on the ground, prior to the application of CEMCOAT F & D, Transparent or Colored. See directions for application.

ADVANTAGES

- Unaffected by transient contact with acids, oils or other chemicals in cleaning solutions.
- Will not become sticky when washed with a damp mop.
- Sanitary—provides a surface from which waste, dirt and dust are easily removed.
- Dries to bright, colorful finish overnight.
- Flows freely—spreads easily.
- Makes frequent repainting unnecessary.*
- Affords high degree of resistance to abrasion—ideal for dado painting.

*See "Sonneborn Suggests" on page 17.

APPLICATION

In black or color, apply with 4″ or 5″ brush. Transparent is applied with 3-knot roofer's brush or lamb's wool applicator.

1—New Floors (Not subject to ground moisture)

New concrete floors should not be coated for at least 6 weeks after installation. Such floors should be washed with a 10% muriatic acid solution (1 part commercial muriatic acid to 10 parts water). Apply solution with mop and allow to remain on floor for 10 minutes. Rinse floor with fresh water and allow surface to become bone-dry before applying CEMCOAT F & D.

First Coat: Reduce CEMCOAT F & D 20% with turpentine. Work thoroughly into surface pores. Allow to dry 24 to 48 hours before applying second coat.

Second Coat: Apply CEMCOAT F & D in consistency as furnished. If thinning is desired, add ½ pint of turpentine per gallon. Allow to dry hard before using floor.

2—Painted Floors

Floor must be dry, clean, free of oils, grease, loose paint particles or wax.

a. Badly Worn Floors: Apply two coats of CEMCOAT F & D as in 1.

b. Floors in Good Condition: Touch up worn spots with a thin coat reduced 20% with turpentine. Allow to dry. Apply second coat as furnished. If thinning is desired, add ½ pint of turpentine per gallon. Allow to dry hard before using floor.

3—Floors Covered with Grease, Oils, etc.

Floors must be cleaned with a standard detergent solution. Scrub with stiff bristle or wire brush. Rinse with hot water. If necessary, repeat. Allow to dry thoroughly. Apply two coats of CEMCOAT F & D as in 1.

4—Floors Subject to Ground Moisture

Floor must be clean, dry and dust-free. Use of vacuum cleaner is recommended. Ventilate room thoroughly.

Unpainted Cement Floors

Thin CEMCOAT F & D 273 with one pint of turpentine to the gallon. As much as one quart of turpentine to the gallon may be used, depending upon density of floor. Proper reduction may be ascertained by applying CEMCOAT F & D 273 to a small area. *It should be absorbed without leaving a film on the surface.*

Brush CEMCOAT F & D 273 thoroughly into floor, brushing out as far as it will spread. Be certain that no puddles remain.

Allow to dry thoroughly before applying CEMCOAT F & D Transparent or Colored.

Previously Painted Floors in Poor Condition

Remove remaining paint, using an effective cleaner, such as 10% solution of lye or other alkaline detergent. After paint has softened, scrub with stiff brush and remove paint by thoroughly flushing with water. Then allow floor to dry thoroughly before proceeding with application of CEMCOAT F & D 273.

Allow to dry thoroughly before applying CEMCOAT F & D Transparent or Colored.

NOTE: *Do not use thinners other than turpentine for reducing. Brushes used in applying CEMCOAT F & D 273 should not be used in applying CEMCOAT F & D Colored or Transparent, unless they have been thoroughly soaked in turpentine and dried.*

5—Wood Floors

Floor must be thoroughly clean and dry. Apply CEMCOAT F & D as outlined in 1, 2 or 3, depending on condition of floor.

6—Aisles, Corridors, Stair Treads, etc.

Clean area to be painted as in 2 or 3. Allow to dry. Apply CEMCOAT F & D.

First Coat: Mix equal parts of Transparent CEMCOAT F & D and CEMCOAT F & D in color. Apply and allow to dry for 24 hours.

Second Coat: Apply CEMCOAT F & D (color as desired) in consistency as furnished. Allow to dry hard before opening to traffic.

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

500 sq. ft. per gal., one coat.
275 sq. ft. per gal., two coats.
(Depending on porosity of surface)

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

How CEMCOAT System Works to Make Upkeep Light

Because worn spots and dulled areas can be easily and effectively retouched with Transparent CEMCOAT F & D, the use of Transparent over CEMCOAT F & D in color offers the most economical system of protecting and maintaining painted cement floors. After a reasonable period, the first coat to wear off will be the protective "over-coat" of Transparent, leaving the decorative "under-coat" of colored CEMCOAT F & D unaffected.

By applying Transparent CEMCOAT F & D which is neutral in color over CEMCOAT F & D in color, the floor will remain level, smooth and attractive. Thus upkeep is made light and economical, too.

SONOMEND

(Primer and Patcher)

USE

Mixed with cement and sand for filling in holes and sealing cracks in concrete floors, and for patching runways, sidewalks, driveways, ramps and platforms. Also ideal for expansion joints in concrete floors, walks, roads, retaining walls, etc.

DESCRIPTION

SONOMEND is a high quality reinforced asphalt compound which, when mixed with cement and sand, provides a firm, level, resilient surface which can usually be opened to traffic in 48 hours. It will not, under ordinary conditions, chip or crack under traffic. Users have found it the ideal and economical solution to floor maintenance problems, which smooths the way for foot, hand truck or power truck traffic, giving years of added useful life to floors, runways, etc. Available in two consistencies: Primer and Patcher.

ADVANTAGES

- No heating—no special tools required.
- Wears longer—will not chip at edges.
- Does not delay production schedules—usually can be opened to traffic in 48 hours.
- Serviceable—economical. Gives surer footing—permits application to feather edge.
- Sparkproofs concrete floors by coating surface with a topping that does not spark upon abrasion.

APPLICATION

Surface to be patched must be thoroughly cleaned of grease, oil or dirt. Loose particles must be removed with a wire brush. If concrete is soft and crumbly, remove all disintegrated parts until sound, solid concrete is reached.

Deep holes or ruts (more than 1″ deep) must be wetted first with water and filled to within 1″ of the surface with a 1:2:4 mix by volume of Portland cement, coarse sand and 3/8″ to 3/4″ crushed stone aggregate. Allow fill to set hard before patching.

1—Patching Holes or Ruts in Concrete

a. Dampen surface, avoiding excess water. Apply SONOMEND Primer directly from container with a stiff, damp brush, making certain that the coat overlaps holes or ruts about 2″ all around.

b. Allow priming coat to set until TACKY TO TOUCH before applying SONOMEND. (Usually one to two hours is sufficient, depending on weather conditions.)

c. Prepare a 1:1:2 mix by volume of SONOMEND, Portland cement and coarse, clean sand as follows: First dry mix the cement and sand, then dampen. Add SONOMEND gradually with gauging water to produce a workable consistency. Continue mixing until color is uniform and free of lumps.

CAUTION: *Do not prepare more of the SONOMEND mixture than can be used within 1 to 2 hours.*

d. Fill in primed holes or ruts with SONOMEND mixture and crown toward center. Steel trowel to a featheredge. Make sure mix does not extend beyond priming coat. After mix has set hard, keep moist for at least 48 hours to insure proper curing.

2—Expansion Joints

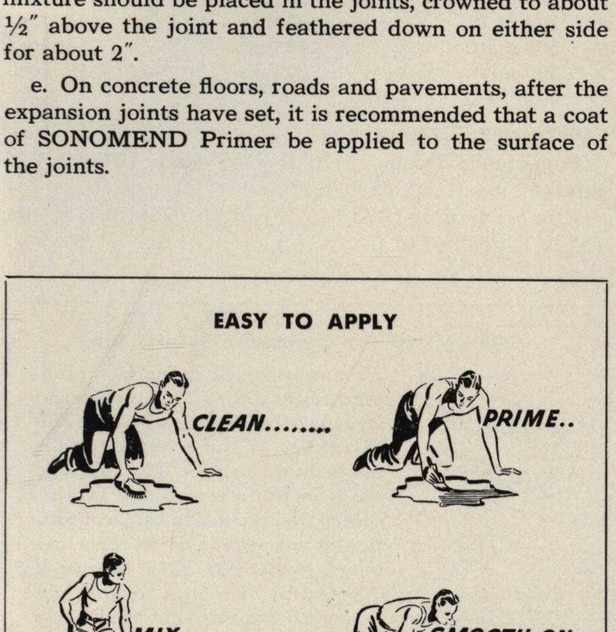
a. Grout out joints to at least ¼″ thick, remove all loosely adherent materials, and, if necessary, wire brush down to a clean, hard surface.

b. Moisten the surface with water, prime with a brush coat of SONOMEND Primer extending at least 2″ beyond the edges of the joints.

c. While the primer is drying, a mixture of 1 part of SONOMEND, 2 parts of Portland cement and 4 parts of coarse sand by volume should be thoroughly mixed, then gauged with water to produce a heavy plastic consistency.

d. After the priming coat has dried tacky to touch, the mixture should be placed in the joints, crowned to about ½″ above the joint and feathered down on either side for about 2″.

e. On concrete floors, roads and pavements, after the expansion joints have set, it is recommended that a coat of SONOMEND Primer be applied to the surface of the joints.



EASY TO APPLY

CLEAN........
PRIME..
MIX......
SMOOTH ON

How SONOMEND is Applied to Concrete Floors

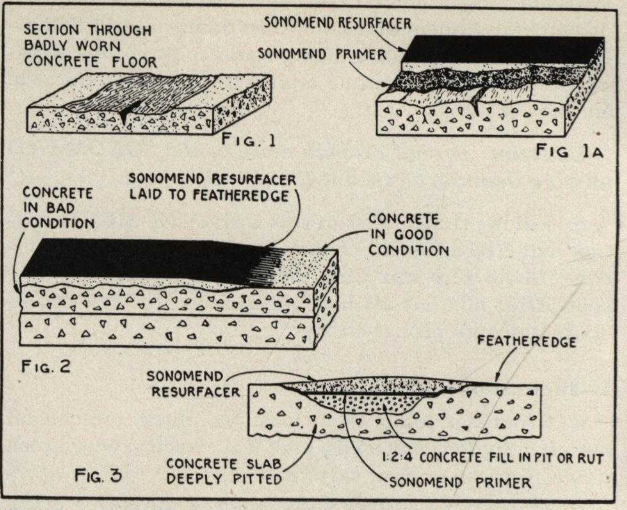

SECTION THROUGH BADLY WORN CONCRETE FLOOR
FIG. 1
SONOMEND RESURFACER
SONOMEND PRIMER
FIG 1A
CONCRETE IN BAD CONDITION
SONOMEND RESURFACER LAID TO FEATHEREDGE
CONCRETE IN GOOD CONDITION
FIG. 2
FEATHEREDGE
SONOMEND RESURFACER
FIG. 3
CONCRETE SLAB DEEPLY PITTED
1:2:4 CONCRETE FILL IN PIT OR RUT
SONOMEND PRIMER

Fig. 1—Section through badly worn concrete floor.
Fig. 1A—Same section showing resurfacing.
Fig. 2—Diagram showing gradation from resurfacing floor to original floor.
Fig. 3—Diagram showing method of patching deep pit or rut in concrete.

COVERAGE

Surface to be Treated ½ in. Thick	Primer Required	Sonomend Required
50 sq. ft.	8 lbs.	42 lbs.
100 sq. ft.	16 lbs.	80 lbs.
200 sq. ft.	32 lbs.	160 lbs.
300 sq. ft.	48 lbs.	240 lbs.
500 sq. ft.	80 lbs.	400 lbs.

CONTAINER SIZES

Sonomend: Drums (470 lb.) ½ drum (260 lb.), 5 gals. (42 lb.), 1 gal. (8 lb.).

Primer: Drums (485 lb.), ½ drum (260 lb.), 5 gals. (42 lb.), 1 gal. (8 lb.).

SONOMEND for Expansion Joints, Too

Sonneborn Suggests...

Expansion joints, to function properly, must absorb the stresses and strains of alternate swelling and shrinkage of the concrete under temperature changes. The ability to cushion the stresses and strains caused by expansion and contraction of concrete is permanently retained by SONOMEND because it is not adversely affected by exposure to weather. SONOMEND firmly bonds to the surrounding concrete surface. This fact, coupled with its inherent resilience which enables it to withstand shocks without cracking, insures against the possibility of SONOMEND being squeezed out of the joint.

FERROLITH H

(Metallic Hardener)

USE

For integral hardening and coloring of concrete floors.

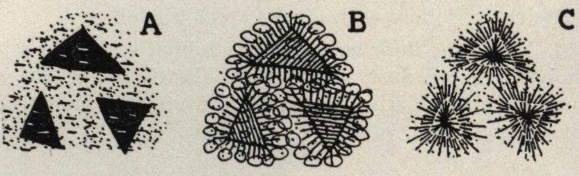
DESCRIPTION

FERROLITH H consists of a uniformly graded oxidizable metallic aggregate, a pozzuolanic agent and a lime-proof oxide pigment. When used in a Portland cement mix, the pozzuolanic agent reacts with the free lime in the cement, increasing workability, while the metallic aggregate becomes an integral part of the concrete surface, producing a tough, metal-reinforced surface.

COLORS

Available in Standard (natural cement), Red, Brown, Gray, Green and Maroon.

PROGRESSIVE ACTION OF FERROLITH H



A. Dry cement and FERROLITH H grains in dormant state.
B. With water added oxidation begins.
C. Final stage. Concrete has hardened and FERROLITH H and cement combined form a tough wear-resisting mass.

ADVANTAGES

- Hardens concrete floors for heavy-duty service.
- Makes concrete floors resistant to grease, oils and alkalies.
- Reduces the danger from sparking of static electricity.
- Integrally colors concrete floors where color is desired.

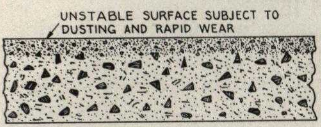


Fig. 1. Magnified section through concrete floor topping before treating with FERROLITH H.

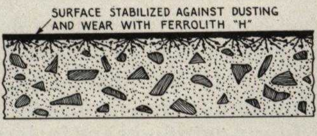

SURFACE STABILIZED AGAINST DUSTING
AND WEAR WITH FERROLITH "H"

Fig. 2. Magnified section through concrete floor topping indicating action of FERROLITH H.

APPLICATION

1—Monolithic Floors

a. Concrete shall be made of the following mix (in parts by volume): 1 part fresh Portland cement, 2 parts clean coarse sand, 3½ to 4 parts ⅜" crushed stone. Add water to produce a workable mix. (Approximately 5½ gals. per bag cement.)

b. Deposit this mix to the desired thickness, employing screeds. Allow ⅛" for shrinkage on floors more than 6" thick.

c. Screed and tamp to eliminate voids, etc.

d. After surface water has disappeared, and while surface is still damp, distribute over it a dry mixture by weight of: 1 part fresh Portland cement, 2 parts FERROLITH H (Colored or Standard).

For each 100 sq. ft. of surface use the following amounts of dry mixture: 45 lbs. mixture for light-duty floors, 60 lbs. mixture for medium-duty floors, 75 lbs. mixture for heavy-duty floors, 180 lbs. mixture for extra heavy-duty floors and for increased electrical conductivity.

e. Float this mixture into the floor. Sufficient moisture to insure proper bonding of the mixture must come up from the base during this floating. Follow with a preliminary light steel troweling. As soon as the surface has set sufficiently, follow with a final steel troweling.

f. When the floor has reached its final set, cover with moist sand, sawdust, burlap or sisalkraft paper. To insure complete curing, keep floor uniformly moist for about one week.

2—Two Course Floors

Topping should be at least ¾" thick.

a. For average traffic, topping should be made of the following mix (in parts by volume): 1 part fresh Portland cement, 2 parts clean coarse sand. If floor is intended for heavy-duty use, the following mix (in parts by volume) should be used: 1 part fresh Portland cement, 1½ parts clean coarse sand, 1½ parts ⅜" crushed stone. Add water to produce a workable mix. (Approximately 5½ gals. per bag cement.)

b. Screed and float the topping to produce an even finish.

c. After surface water has disappeared and while surface is still damp, distribute over it a dry mixture by weight of: 1 part fresh Portland cement, 2 parts FERROLITH H (Colored or Standard).

For each 100 sq. ft. of floor surface, use the following amounts of dry mixture: 45 lbs. mixture for light-duty floors, 60 lbs. mixture for medium-duty floors, 75 lbs. mixture for heavy-duty floors, 180 lbs. mixture for extra heavy-duty floors and for increased electrical conductivity.

d. Float this mixture into the floor. Sufficient moisture to insure proper bonding of the mixture must come up from the base during this floating. Follow with a preliminary light steel troweling. Permit surface to set sufficiently, and follow with a final steel troweling.

e. When the floor has reached its final set, cover with moist sand, sawdust, burlap or sisalkraft paper. To insure complete curing, keep floor uniformly moist for about one week.

NOTE: *FERROLITH H contains a pozzuolanic material, which combines with the free lime on the surface of the cement, thus resulting in a harder floor. However, to obtain this added measure of hardness, it is necessary to allow a slightly longer time for the water to be absorbed by FERROLITH H. Instead of troweling immediately after sprinkling on FERROLITH H, a few minutes must elapse.*

WAXING – It is recommended that FERROLITH H colored floors be finished with SONOSHEEN Colored Paste Wax after floors have thoroughly cured and dried.

COVERAGE

	FERROLITH H
Light traffic	30 lbs. per 100 sq. ft.
Medium traffic	40 lbs. per 100 sq. ft.
Heavy traffic	50 lbs. per 100 sq. ft.
Extra-heavy traffic and also for increasing electrical conductivity	120 lbs. per 100 sq. ft.

CONTAINER SIZE

100 lb. bags

HYDROCIDE CURING COMPOUND

USE

To prevent the rapid evaporation of water content from freshly laid concrete during the initial hardening period.

For curing freshly laid concrete.

DESCRIPTION

HYDROCIDE Curing Compound is a ready-to-use solution of mineral waxes and vegetable semi-drying oils in a hydrocarbon solvent which, when sprayed over the surface of freshly poured concrete, forms a uniform membrane which seals in the gauging water and prevents rapid evaporation. It produces a better, more efficient cure than can be obtained with the usual makeshift materials such as straw, sawdust and wet burlap. It preserves the finished appearance of freshly laid concrete by covering it with a protective film which prevents soot and dirt from being absorbed into the surface. At the same time, the speed and ease of application help to reduce curing costs.

Report on HYDROCIDE Curing Compound from the New York Testing Laboratories, Inc.

(In accordance with A.S.T.M. Procedure C-156-40T)

"The following concrete mix was made up and tests made thereon:

"Concrete Mix—A mix of one part of cement and two parts of sand or 45.7 lbs. of cement and 100.5 lbs. of sand and 19.5 lbs. of water was made up and cast into molds, in accordance with A.S.T.M. Designation C-156-40T. Four test specimens were made for each material being tested as well as for the control specimens.

"The results expressed in % moisture retention and loss are shown in following table:

Curing Time		6 hrs.	24 hrs.	48 hrs.	144 hrs.	192 hrs.
Average of 4 specimens uncoated	Loss	1.4	7.5	12.2	18.5	19.8
	Retention	98.6	92.5	87.8	81.5	80.2
Average of 4 specimens coated with competitive composition	Loss	1.1	4.6	6.8	9.8	10.0
	Retention	98.9	95.4	93.2	90.2	90.0
Average of 4 specimens coated with HYDROCIDE Curing Compound	Loss	0.9	3.0	4.1	6.5	6.6
	Retention	99.1	97.0	95.9	93.5	93.4

COLORS

Natural. Can be furnished in red where specifications call for fugitive dye. Color disappears shortly after application.

ADVANTAGES

- Maintains proper water cement ratio throughout setting cycle.
- Ready to use—easier and more economical than ordinary curing methods.
- Applicable by brush or spray.
- Permits attainment of maximum strength of concrete.
- Contributes to complete hydration of Portland cement particles.

APPLICATION

HYDROCIDE Curing Compound should be applied to horizontal surfaces with brush or spray, as soon as the concrete reaches its initial set and after the surface is free of excess water. For poured concrete, HYDROCIDE Curing Compound is applied as soon as the forms have been removed and after the walls have been re-wetted. For vertical surfaces, only the spray method is recommended.

When brush method is used, care should be taken not to dislodge surface sand or cement particles. Use of wide, soft bristle brush is recommended.

When spray method is used, application should be made at temperatures preferably above 50° F. HYDROCIDE Curing Compound should be sprayed parallel with the surface. Any standard external mix spray gun may be used. An atomizing air pressure of 35 pounds and a fluid pressure of six pounds is sufficient. However, on vertical surface applications the air pressure should be increased as conditions warrant.

NOTE: *Store at temperature above 50° F. If subjected to lower temperatures, store for 24 hours at 70° F. before using.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

250 sq. ft. per gal.

CONTAINER SIZES

Drums, 5 gals.

SONOBRITE

USE

For integrally coloring concrete floors, steps, ramps, etc.

For integrally coloring mortar for brick joints.

For integrally coloring stucco and plaster.

DESCRIPTION

SONOBRITE is a high quality coloring compound containing carefully selected oxide pigments of maximum tinctorial strength. When mixed with concrete or mortar, the pigments are uniformly dispersed throughout the mix, assuring a richer, deeper color. Due to the greater tinctorial strength of SONOBRITE, less material is required. The colors are non-fading and will not spot or streak.

COLORS

Available in Blue, Red, Black, Green, Buff, Brown and Maroon.

ADVANTAGES

- Withstands weathering.
- Will not affect the tensile and compressive strength of concrete.
- Easily miscible with sand and cement—will not "float" to the top of the mix.
- Withstands the action of lime in cement.
- Easy to use—economical.

APPLICATION

The same kind of ingredients should be accurately maintained in all batches. The kind of lime, cement and sand should not be changed after work has started.

1—For Concrete Floors

a. Make a mixture by weight of the following materials: one part fresh Portland cement, two parts sand (free from loam or organic impurities), and SONOBRITE. Mix until entire mass is uniform in color and add gauging water to produce a stiff, working consistency. Continue mixing until mass is free from spots or streaking color.

b. After the surface water of the base slab has disappeared, apply the above mixture to a thickness of 1″, in 2 ½″ courses, puddling the mass to eliminate entrapped air. Where color is not needed throughout the topping, the finish may be placed in two layers. Bottom layer of topping without color is placed to within ¼″ of the finished floor level and the remaining ¼″ is filled in with the colored mixture.

c. After surface water disappears, level surface with a screed and steel trowel.

d. Topping should be kept moist for at least one week to insure proper curing.

2—For Mortar Joints

a. Mix until uniform in color, using the required quantities of fresh Portland cement, sand (free of loam or organic impurities), hydrated lime and SONOBRITE.

b. Add gauging water to produce a stiff working consistency and continue mixing until entire mass is absolutely uniform and free of spots and streaks of color.

c. Use above mixture to paint up joints.

NOTE: *TRIMIX, Sonneborn's multi-purpose and mortar admixture is recommended for use in conjunction with SONOBRITE mixes. TRIMIX contributes to uniform distribution of color and improves the texture of the finished surface.*

QUANTITY REQUIRED

2 to 5 lbs. per bag of cement, depending on itensity of color desired.

CONTAINER SIZES

Black (mineral), Buff, Green, Maroon, Brown, and Blue—50 lb. bags.

Black (oxide)—40 lb. bags.

Red—60 lb. bags.

Keep Water-Cement Ratio Down!

Do not use an excessive water-cement ratio in concrete construction work as excessive water tends to lower the compressive strength of the finished concrete. A maximum of six gallons of water per bag of cement should be the limit.

LIGNOPHOL PENETRATING FINISH

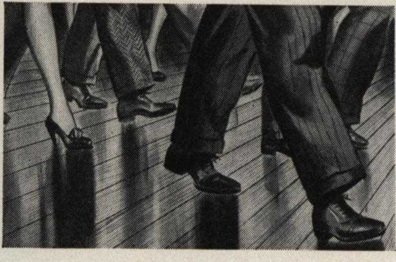
The One-Application Wood Preservative and Finish

USE

For preserving and finishing heavy-duty floors, exterior woodwork, plywood and structural woodwork, and prefabricated wood units.

DESCRIPTION

LIGNOPHOL Penetrating Finish is a clear, amber colored liquid whose ability to protect wood against decay, the effects of weathering and severe usage makes it the ideal preservative and finish for all types of exterior wood surfaces and for heavy-duty floors in schools, factories, industrial plants, armories and similar types of buildings.



The greatest advantage that LIGNOPHOL Penetrating Finish has over the usual surface treatments is its positive ability to penetrate into wood, depositing toughening resins, life-imparting oils and fungicidal chemicals which resist molds, fungi, and wood destroying organisms. Reports prove that LIGNOPHOL Penetrating Finish not only retards swelling and cupping of wood, but it resists moisture transfusion through the wood, improves compressive mechanical properties and greatly reduces decay.

COLORS

LIGNOPHOL Penetrating Finish is available in Natural, Light Brown and Dark Brown.

A Medium Brown may be obtained by mixing one part of Natural and two parts of Dark Brown.

If Light Brown is not available at job site, it may be obtained by mixing two parts of Natural and one part of Dark Brown.

Leaders O. K. LIGNOPHOL

LIGNOPHOL is endorsed by the Maple Flooring Manufacturers Association, the Western Pine Association, the National Oak Flooring Manufacturers' Association, as well as by leading architects, decorators and builders.

ADVANTAGES

- Is toxic to the fungus organisms to which wood is normally susceptible—mildew, dry and wet rot, etc.
- Leaves no superficial film to wear off.
- Contributes to the preservation of the original composition and elasticity of the living wood.
- Penetrates the wood both against and with the grain.
- Retards shrinkage, warping, cracking, curling and splintering.
- Saves time, effort, expense — only one application required.
- May be tinted with colors in oil for special effects.
- Provides an excellent base for subsequent painting or waxing.

APPLICATION

PREPARATION OF SURFACE—New floors or other surfaces to be treated must be sanded with the grain. On old surfaces, previous finish must be sanded off. Old floors or other surfaces in good condition and not previously treated usually need only to be cleaned before applying LIGNOPHOL. All surfaces must be thoroughly dry. LIGNOPHOL should not be applied to unseasoned or "green" wood.

Apply LIGNOPHOL directly from container. Nothing to add. On floors, use a lamb's wool applicator or long-handled floor brush. On exterior wood surfaces, use brush or dipping method.

1—Dipping Method

The dipping method is used during the fabrication of wood units, flooring and sub-flooring. Pour LIGNOPHOL into a metal trough of suitable size. Immerse wood unit to be treated in LIGNOPHOL for three to five minutes. Remove wood and stand at an angle so excess LIGNOPHOL may be drained off (with uniform air spaces between units to allow for proper drying). On flooring, the removal of excess LIGNOPHOL is facilitated by using a rubber squeegee on the upper surface. Allow wood to dry.

2—Brushing Method

Apply LIGNOPHOL with regular paint brush to all sides, edges and surfaces. Apply liberally so that wood absorbs as much LIGNOPHOL as possible. Wipe off excess and allow to dry.

3—Floors (Flat or Satin Finish)

a. Apply LIGNOPHOL directly from container with lamb's wool applicator or long-handled floor brush.

b. Brush out full saturation coat. Within two hours, rub down treated surface with dry, clean rags or mop.

c. Buff surface after 24 hours with #00 steel wool, using an electric polishing machine or weighted polisher. For satin finish, buff with #2 steel wool.

If floor is to be used within 48 hours, sprinkle after LIGNOPHOL application with finely powdered cornmeal, except on oak floors. If treated surface is to be waxed, do not apply the wax until one week after application of LIGNOPHOL. LIGNOPHOL normally eliminates the need for a filler, but if a filler is desired on open-grained wood, use (a) LIGNOPHOL, (b) Filler, (c) Wax.

SPECIAL NOTES

Premises should be well ventilated during and after application of LIGNOPHOL. If LIGNOPHOL is applied on a damp day, drying is retarded. To avoid spontaneous combustion, mops or cloths used with LIGNOPHOL should be kept immersed in water until destroyed or washed clean.

Surfaces treated with LIGNOPHOL Penetrating Finish may be painted only after surface has dried ½ to 1 month, depending on type of wood and atmospheric conditions. On surfaces to be painted, use LIGNOPHOL Natural.

STIR OR SHAKE WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

Hard Wood: 700 sq. ft. per gal., one coat.

Soft Wood: 600 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal., 1 qt.

Recommended LIGNOPHOL Finishes for Various Types of Buildings (Floors and Trim)

Type of Building	Penetrating Satin Finish*	Wax Finish	Penetrating Finish* (Flat)	Quick-Drying*
Armory	✓			
Church	✓			
Dance Hall		✓ High Gloss		
Department Store			✓	
Exterior Wood			✓	
Gymnasiums	✓			
Industrial Buildings			✓	
Office Buildings	✓			
Residences		✓ Med. Gloss		✓
Residences		✓ High Gloss		✓
Schools & Institutions	✓			

*For floors only.

LIGNOPHOL WAX FINISH

The One-Application Wood Preservative and Finish

USE

For normal-service wood floors, doors, paneling, trim and wainscoting, woodwork.

DESCRIPTION

LIGNOPHOL Wax Finish with one application adds beauty and distinction to wood floors and woodwork in homes, offices and residences. This handsome wood finish does not cover up the natural beauty of the wood. Instead, it actually highlights the subtle appearance of the grain itself, increasing the attractive appearance of the wood. LIGNOPHOL Wax-finished floors and woodwork are rich looking and have a dignity all their own.

COLORS

Available in Natural, Light Brown, Medium Brown and Dark Brown.

ADVANTAGES

- Saves time, effort and expense—only one application is required.
- By its penetrative action it acts to an appreciable extent as a dampproofer.
- Leaves no superficial film to wear off.
- May be tinted with colors in oil for special effects.
- Provides a surface from which dust and dirt can be easily removed.
- Gives an exceptionally long-lasting finish.
- Easy to use — requires no thinning or special preparation.

APPLICATION

1—Prepare the Surface—New wood floors must be sanded with the grain to a clean, smooth finish. The previous finish on old floors must be removed by sanding. Sweep floor clean after sanding. Floor must be thoroughly dry.

2—Shake Well—Shake container well before using. Apply directly from original sealed package. Nothing to add.

3—Apply LIGNOPHOL—Work thoroughly into wood with lamb's wool applicator or long-handled clean bristle brush. Make only one application. Treat no more than 1000 square feet at a time.

4—Rub Down Thoroughly—From 30 to 45 minutes after start of application, rub down entire surface thoroughly with clean, dry cloth or by using an electric floor machine over burlap or clean cloth.

5—Buff with Steel Wool—When finish is dry (allow at least two hours or more after rub down) steel-wool the floor with an electric floor machine over a pad of #0 or #1 steel wool. On small areas steel wool buffing can be done by hand.

6 — Wax for High Polish — Paste wax can be applied over LIGNOPHOL Wax Finish. It is advisable to wait a week before waxing. Then wax a small area first. If satisfactory polish is not obtained, wait a few days before repeating test. Polish with electric floor machine.

For Trim, Paneling Doors, etc. — Surface must be sanded *with the grain* to a smooth and clean finish. Brush thoroughly into wood with a clean paint brush. Then follow same directions as under Step 4 and Step 5, rubbing off and polishing with steel wool by hand.

NOTE: *The premises should be well ventilated during and after the application of LIGNOPHOL. If LIGNOPHOL is applied on a damp day, drying is retarded. To avoid spontaneous combustion, mops or cloths used with LIGNOPHOL should be kept immersed in water until destroyed or washed clean.*

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

Hard Wood: 700 sq. ft. per gal., one coat.
Soft Wood: 600 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal., 1 qt.

Recommended LIGNOPHOL Finishes for Various Types of Wood (Floors and Trim)

Type of Wood	Penetrating Finish	Wax Finish	Quick-Drying*
Beech (Industrial)	✓		
Beech (Others)		✓	✓
Birch (Industrial)	✓		
Birch (Others)		✓	✓
Chestnut Flooring		✓	✓
Chestnut Trim		✓	
Cherry Flooring		✓	✓
Cherry Trim		✓	
Gum (Industrial)	✓		
Gum (Others)		✓	✓
Knotty Pine Trim		✓	
Mahogany Flooring		✓	✓
Mahogany Trim		✓	
Maple (Industrial)	✓		
Maple (Others)		✓	✓
Oak Flooring		✓	✓
Oak Trim		✓	
Pine Flooring		✓	✓
Plywood		✓	✓
Flexwood		✓	✓
Masonite Presdwood	✓	✓	✓

* For floors only.

LIGNOPHOL QUICK-DRYING FINISH

The One-Application Wood Preservative and Finish

USE

For all types of wood and composition floors.

DESCRIPTION

LIGNOPHOL Quick-Drying Finish is a liquid that penetrates, preserves, seals and finishes all types of wood floors in one application. It leaves a satin gloss finish that highlights and enhances the natural beauty of the wood. LIGNOPHOL Quick-Drying not only is highly resistant to abrasion, chipping or cracking, but is practically impervious to the action of water and alcohol.

COLORS

Natural and Brown. Mix to produce Light Brown.

ADVANTAGES

- Saves time, effort and expense—only one application is required on most woods.
- Penetrates the wood both against and with the grain.
- Leaves no superficial film to wear off.
- Preserves the original resiliency of wood.
- Provides a surface from which dust and dirt can be easily removed.
- Is highly resistant to marring or scratching—does not lap or spot.
- Practically impervious to the action of water and alcohol.

APPLICATION

1—Prepare the Surface—Sand new floors with grain to clean, smooth finish. On old floors, remove previous finish by sanding. (Old floors previously treated and in good condition usually need only cleaning before application.) Be sure floor is swept clean and is perfectly dry. Do not apply to unseasoned or "green" wood.

2—Shake Well—Shake container well before using. Apply directly from original sealed package. Nothing to add.

3—Apply LIGNOPHOL—Work thoroughly into wood with lamb's wool applicator, soft cloth, brush or squeegee. Make only one application. Treat no more than 1000 square feet at a time.

4—Rub Down Thoroughly—Within 15 minutes after start of application, rub down entire surface thoroughly with clean, dry cloth or by using an electric floor machine over burlap or clean cloth.

5—Steel Wooling (Optional)—*Recommended only when a particularly smooth finish is desired.*

Permit finish to dry (allow at least two hours after rubdown). Buff floor with steel wool, using electric floor machine over pad #0 or #1 steel wool. For best results, steel wool the day after application.

Wax for High Polish—If a coat of wax is desired for the final finishing of the floors, paste wax may be applied and polished, after LIGNOPHOL is thoroughly dry and hard, or following the steel-wool buffing operation.

NOTE: *The premises should be well ventilated during and after the application of LIGNOPHOL. To avoid spontaneous combustion, mops or cloths used with LIGNOPHOL should be kept immersed in water until destroyed or washed clean.*

CAUTION: If stored at temperatures below 50° F., LIGNOPHOL Quick-Drying should be placed in warmer location (above 50° F.) for about 24 hours before applying.

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

Hard Woods: 700 sq. ft. per gal., one coat.
Soft Woods: 600 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

Tips on Floor Maintenance

Sonneborn Suggests...

The "know-how" of making floors stay beautiful and attractive is regular cleaning, waxing and polishing. Wood floors should never be washed or scrubbed with soap and water, since water tends to raise the grain, warp the wood and discolor the floor. Sweeping wood floors with a dry broom or brush accomplishes nothing more than a "kicking-up" of dust, leaving the appearance of the wood unchanged and surface marks untouched. Many years of life are added to wood floors, especially LIGNOPHOL-treated floors, when regular cleaning is done with FLOOR-LIFE CLEANER. (See page 36.)

FLOORLIFE 69

USE

For sealing and finishing wood floors.

DESCRIPTION

FLOORLIFE 69 is a high-gloss wood floor varnish that seals and finishes in the same application. FLOORLIFE 69 produces a longer wearing gloss finish and also serves as a better base for waxing. It dries to a hard film that is extremely durable and serviceable. It withstands more than ordinary wear.

ADVANTAGES

- Dries dust-free in about five hours.
- Can be colored with oil-soluble dyes for staining effects.
- Flows easily—spreads smoothly—self-leveling.
- Will not whiten on contact with water.

APPLICATION

Surface to be treated must be clean, dry and free of oil, wax, stains or other foreign matter.

1—Hard Woods (Maple, etc.)

Apply FLOORLIFE 69 with a varnish brush or long-handled floor brush. One coat is usually sufficient. However, if higher gloss is desired, apply second coat of FLOORLIFE 69 after first coat is thoroughly dry.

2—Soft Woods (Pine, etc.)

Apply FLOORLIFE 69 with a varnish brush or long-handled floor brush. Two coats are usually necessary. Allow first coat to dry thoroughly before applying second coat. If two coats of FLOORLIFE 69 are applied in the same day, reduce the first 20% with turpentine or mineral spirits.

NOTE: *When two coats of FLOORLIFE 69 are applied, a filler is usually not necessary. However, if filler is required, it should be used before application of FLOORLIFE 69.*

FLOORLIFE 69 may be tinted by adding pure colors in oil.

A satin finish may be obtained by steel-wooling final coat of FLOORLIFE 69, after it is thoroughly dry and hard, with #000 steel wool.

SHAKE WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

500 sq. ft. per gal., first coat.
600 sq. ft. per gal., second coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

FLOORLIFE CLEANER

"Waxes as It Cleans"

USE

For cleaning wood and linoleum covered floors in one application. Also suitable for cleaning furniture, cabinets and woodwork.

DESCRIPTION

FLOORLIFE CLEANER is an extra-mild floor cleaning solution that "waxes as it cleans" in one application—helps restore that "like new" appearance to all wood and linoleum covered floors. It speedily removes foot marks, rubber heel burns and other surface stains. It deposits a fine film of protective wax which makes it easier to keep floors smooth and bright.

ADVANTAGES

- Will not warp or raise the grain, darken or discolor the wood.
- Ready to use—needs no special preparation.
- Leaves a lustrous, gleaming surface, makes dust removal easy.
- Revives and brings out the original color, pattern and design of linoleum.
- Removes grease spots and stains.
- Removes rubber heel marks.
- Easy to use—economical.

APPLICATION

1—Application by Hand (Floors, Cabinets, Woodwork, Furniture)

a. Apply liberally with cloth, mop or lamb's wool applicator, working not more than 100 sq. ft. at a time.

b. Ten minutes after application, rub down and immediately wipe up with clean cloth. Stubborn stains and dirt deposits should be rubbed off wood surfaces with #2 steel wool.

c. After cleaning, when almost dry, buff with soft cloth or lamb's wool applicator.

2—Application by Machine (Floors only)

a. Apply liberally with cloth, mop or lamb's wool applicator, working not more than 200 sq. ft. at a time.

EASY TO APPLY

Apply liberally

Wipe dirt off

Buff when dry

b. Allow to set for about 10 minutes, then rub down with a floor polishing machine, padding brush with #2 steel wool.

c. Wipe up immediately with clean rags. Replace rags as they become soiled.

d. An hour or two after cleaning, buff floor with brush in floor polishing machine.

3—Linoleum Floors

Apply by hand or machine as described above, but rub down with clean, dry cloth—*not steel wool.*

NOTE: *Rags, mops and cloths used in applying FLOORLIFE CLEANER can be made suitable for re-use by rinsing in hot soap solution. Dirty steel wool should be destroyed.*

SHAKE WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

About 800 to 1000 sq. ft. per gallon, depending on conditions.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal., 1 qt.

SONOSHEEN BUFFING WAXES

(Liquid and Paste)

USE

For waxing floors of wood, linoleum, cork, composition, except asphalt or rubber tile; also for all types of furniture.

DESCRIPTION

SONOSHEEN Buffing Waxes are available in Liquid or Paste form to meet individual preferences. They are homogeneous blends of natural carnauba waxes selected for maximum hardness and luster. They do not turn "grainy" in warm weather. They contain no toxic coal tar solvents, soap, oil, grease or any other injurious adulterant. They give a uniform polish upon buffing approximately 20 minutes after application.

COLORS

Red, Green and Gray.

ADVANTAGES

- Non-marring.
- The liquid wax is permanently non-settling.
- Highly resistant to temperature changes—will not thin out in warm water.

APPLICATION

Surface to be waxed must be thoroughly dry, clean and free of oil or grease.

SONOSHEEN LIQUID BUFFING WAX

1—Floors

a. Stir or shake well before using. Apply with lamb's wool applicator or soft cloth. Spread wax in thinnest film possible. Allow to dry.

b. About 15 to 20 minutes after application, buff surface with clean cloth, weighted brush or electric polishing machine. If higher gloss is desired, apply second coat of SONOSHEEN several hours after first coat has set.

2—Furniture, Woodwork, etc.

a. Follow procedure as in 1-a.

b. About 15 to 20 minutes after application, buff treated surface with clean, soft cloth.

SONOSHEEN PASTE WAX

1—Floors

a. Place a small quantity of SONOSHEEN between two or three layers of cheesecloth folded to form a bag. As the "wax bag" is passed over the surface, SONO-

SHEEN is forced through the mesh, depositing a thin, uniform coat. Allow to dry.

b. About 15 to 20 minutes after application, buff with clean, soft cloth, weighted brush or electric polishing machine. If a higher gloss is desired, apply a second coat of SONOSHEEN several hours after first has set.

2—Furniture, Woodwork, etc.

a. Follow procedure as in 1-a.

b. About 15 to 20 minutes after application, buff with clean, soft cloth.

NOTE: *SONOSHEEN Buffing and Paste Waxes should not be used on asphalt tile or rubber tile floors.*

KEEP SONOSHEEN *LIQUID BUFFING* WAX FROM FREEZING

CAUTION: Inflammable Mixture

Do Not Use Near Fire or Flame. C. of A. No. 1532

COVERAGE

Paste: 300 sq. ft. per pound (dense surfaces).
50 to 75 sq. ft. per pound (porous surfaces).

Liquid: 2500 to 3000 sq. ft. per gal. (dense surfaces).
350 to 400 sq. ft. per gal. (porous surfaces).

CONTAINER SIZES

Paste: 30 lbs., 6 lbs., 1 lb.

Liquid: Drums, ½ drums, 5 gals., 1 gal., 1 qt.

Sonneborn Suggests...

Tips on Waxing

Do not apply wax in a thick film, but lay it on in as thin a film as possible. Thick layers of wax cause the wax to "track" on to shoes and generally leave a "gooey" mess.

SONOSHEEN SELF-POLISHING WAX

USE

For waxing floors of rubber, linoleum, tile, asphalt, terrazzo, composition, also varnished and painted surfaces.

DESCRIPTION

SONOSHEEN Self-Polishing Wax is a non-rubbing liquid emulsion of carnauba waxes and non-slip resins. It produces a gleaming, lustrous finish without polishing or buffing. SONOSHEEN gives a slip-resistant finish, is non-inflammable and practically odorless.

ADVANTAGES

- Easy to apply.
- Dries in about 15 to 20 minutes.
- Will not cause softening or swelling of rubber or asphalt tile.

APPLICATION

Surface to be waxed must be dry and absolutely clean. Stir SONOSHEEN well before using.

1—Dense Floors in Good Condition

a. Apply with clean mop, cloth, lamb's wool applicator or spray. Spread out lightly in a thin film. One coat is usually sufficient. Allow to dry 20 to 30 minutes. No polishing or buffing ordinarily required.

b. If high gloss is desired, buff lightly with dry mop, soft cloth or polishing machine about one-half hour after natural gloss appears.

2—Porous and Worn Floors

a. Follow directions as in 1-a. On highly porous and badly worn floors a second coat of SONOSHEEN may be required.

b. For high gloss, follow directions as in 1-b.

NOTE: *Floors waxed with SONOSHEEN are easily maintained by dry sweeping, or occasionally going over the surface with a moistened rag or mop. Renewal of the finish may be obtained by applying a thin coat of SONOSHEEN.*

KEEP FROM FREEZING

Sonneborn Suggests...

Caution!

Do not use a solvent-type wax on asphalt or rubber tile floors. Solvent-type waxes cause softening of the composition flooring.

TRIMIX

Multi-Purpose Integral Liquid Admixture

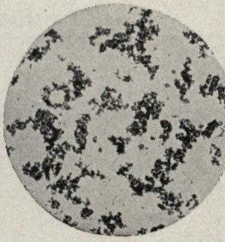
USE

For reducing water ratio, increasing cement dispersion and accelerating set of concrete, mortar and stucco mixes. It is also used with air-entwined cement and concrete.

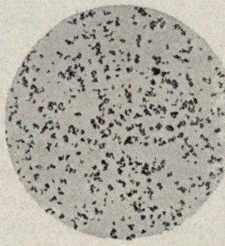
DESCRIPTION

TRIMIX is a multipurpose admixture that has proved its efficiency in actual construction over a period of many years. Scientifically prepared and specifically developed to overcome many of the uncertain human factors usually present on construction jobs, TRIMIX not only produces a denser, richer mix, it actually puts new speed and economy in the concrete construction. For example, when TRIMIX is added to the gauging water, it increases the wetting action of the gauging water, increases dispersion of the Portland cement particles and hastens hydration of the cement. Result: TRIMIX produces a mortar of higher early compressive strength and shortens setting time to a considerable degree. TRIMIX offers equal advantages when used in ready-mixed concrete.

TRIMIX
for Better Dispersion



With plain gauging water



With one quart TRIMIX per bag of cement

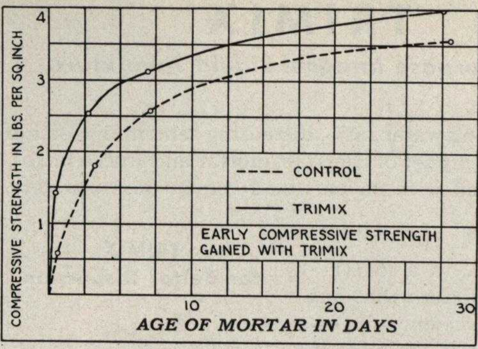
Photomicrographs by reputable independent laboratory

ADVANTAGES

- Improves workability of cement mixes.
- Accelerates set – produces high early compressive strength.
- Improves quality of finished concrete: higher early compressive strength, increased durability, less segregation, greater water retention.
- Aids winter concrete work.

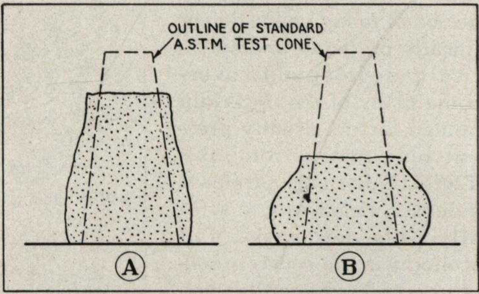
APPLICATION

TRIMIX is added directly to the gauging water. Quantities specified are based on average conditions and are predicated on withholding about 15% of the amount of gauging water normally required. For ready-mixed concrete, TRIMIX is added at the mixing plant or at the project site, being mixed immediately for at least one minute and discharged within one hour. In warm weather, mix should be discharged within one-half hour.



Graph indicating high early compressive strength attained by the use of **TRIMIX.**

Sketches showing (A) slump test without **TRIMIX** and (B) slump test with **TRIMIX.**



1—*For reduction of water ratio; for high early strength; for improved workability and homogeneity; for more thorough curing; for set acceleration; for increasing resistance to water and erosion; for reduction of bleeding and laitance; for integral hardening:*

1 quart **TRIMIX** per bag of cement.

2—*For mortar containing lime:*

1 quart **TRIMIX** per bag of lime in addition to the amount required per bag of cement.

3—*For protection of mix against freezing:*

Temperature	**TRIMIX** *Per Bag of Cement*
25° F.	1½ quarts
20° F.	2 quarts
15° F.	2½ quarts
10° F.	3 quarts
5° F.	3½ quarts
0° F.	4 quarts
–5° F.	4½ quarts
–15° F.	5 quarts
–10° F.	5½ quarts

4—*For improving bonding efficiency of:*

a. Concrete floor topping to base slab.

b. Portland cement stucco to masonry walls.

One part **TRIMIX** to 20 parts water. (Sufficient Portland cement should be added to produce a brushing consistency. Apply this slush coat to roughened surface of base slab or masonry walls.)

NOTE: *At temperatures exceeding 80° F., the amount of TRIMIX may be reduced proportionately to prevent too rapid set acceleration, but never use less than 1 pint of TRIMIX per bag of cement.*

STIR WELL BEFORE USING

CONTAINER SIZES

Drums (54 gal.), ½ drums (30 gal.), 5 gal., 1 gal.

HYDROCIDE ADMIXTURES

(Paste and Powder)

USE

For integrally protecting mass concrete, stucco and mortar in foundation construction work; also above-grade concrete structures including silos, storage tanks, etc.

DESCRIPTION

HYDROCIDE Paste is a colloidal, non-settling suspension of stearates. When added to concrete mixes, it reacts with the free lime, producing a water-repellent metallic soap. As the concrete sets, this water-repellent compound is deposited in the internal pores of the concrete, decreasing porosity and lessening the possibility of entrance and transmission of water.

HYDROCIDE Powder is a dry mixture of calcium stearate and lime-reactive finely powdered aggregate. When added to a dry concrete mix, it coats the sand and aggregate components with water-insoluble calcium stearate, lines the internal pores and capillaries, and imparts a negative water capillarity to the finished concrete.

ADVANTAGES

- Help to maintain a dimensionally stable concrete structure.
- Minimize the danger of cracking and spalling.
- Reduce free lime content.

APPLICATION

HYDROCIDE Paste — Place the specified amount (see table below) of HYDROCIDE Paste in a convenient size pail or container. Slowly add an equal volume of water to the paste, stirring it gradually to obtain a uniform slurry. Never add the paste to the water. When the paste is thoroughly dispersed, add to the mortar or concrete mix, gauging with the specified amount of water to provide workability.

NOTE: *For extreme or unusual conditions, special instuctions are available on request.*

HYDROCIDE Powder — Mix and thoroughly disperse with the dry Portland cement and aggregate before adding gauging water. In transit-mixed concrete, add HYDROCIDE Powder to the dry mixture, mix dry for about five minutes, and then pump in gauging water.

CONTAINER SIZES

Paste: 500 lb. drums, 275 lb. drums, 45 lb. containers, 9 lb. containers.

Powder: 50 lb. bags.

Table for Estimating Quantities of HYDROCIDE Admixtures

	100 sq.ft. 1" thick		One Cubic Yd.		100 Cubic Ft.	
	HYDROCIDE Admixtures	Bags of Cement	HYDROCIDE Admixtures	Bags of Cement	HYDROCIDE Admixtures	Bags of Cement
1:2:3 Concrete	2 lbs.	2	7 lbs.	7	26 lbs.	26
1:2:4 Concrete	2 lbs.	1¾	6 lbs.	6	22 lbs.	22
1:2 Floor Finish	4 lbs.	4	12 lbs.	12½	46 lbs.	46
1:3 Brick Mortar	3 lbs.	3	9 lbs.	9½	35 lbs.	35
1:2 Plaster Coat	4 lbs.	4	12 lbs.	12½	46 lbs.	46
1:3 Stucco	3 lbs.	3	9 lbs.	9½	35 lbs.	35

(For each bag of lime used, add 1 lb. HYDROCIDE Paste or Powder.)

HYDROCIDE COLORLESS

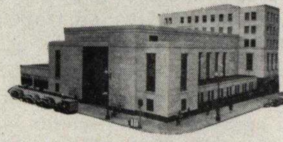
The Invisible Water-Repellent Treatment

USE

For exterior concrete and masonry walls, above grade.

Typical buildings where HYDROCIDE Colorless was used.

Armory, South Portland, Maine.



Farmers and Mechanics Savings Bank, Minneapolis, Minn.

DESCRIPTION

HYDROCIDE Colorless is a transparent highly efficient water-repellent compound which, when applied to any structurally sound exterior concrete or masonry surface, soaks into and fills the internal pores and voids with water-repellent agents, sealing the surface with a protective, invisible film. The protective efficiency and lasting qualities of HYDROCIDE Colorless, which actual field experience has shown to last up to 10 years, are dependent upon climate, soundness of structural conditions and application. Surfaces treated with HYDROCIDE Colorless may be painted over.

Available in two consistencies. HYDROCIDE Colorless D for highly porous light colored surfaces: concrete, sandstone, stucco, Indiana limestone, asbestos cementboard.

HYDROCIDE Colorless G for relatively dense surfaces: red brick, limestone, colored natural stone and colored stucco.

ADVANTAGES

- Acts as preservative for old masonry.
- Reduces the danger from effects of freezing and thawing.
- Helps preserve the original appearance of exterior walls.
- Minimizes the absorption of dust, soot and stains.
- May be applied in warm or cool weather.
- Easy to use – economical.

APPLICATION

The successful application of HYDROCIDE Colorless depends on the proper preparation of the wall surface. All surfaces must be clean and thoroughly dry. All defective joints and cracks should be repointed. Window and door frames should be tightly caulked. Parapet walls should be thoroughly sealed. Wait 2 to 3 days after a rain before applying HYDROCIDE Colorless.

When using HYDROCIDE Colorless G, two coats are required, the second coat applied after the first has dried.

HYDROCIDE Colorless D normally requires only one coat, but where the surface is highly porous two coats are applied, the second after the first has dried.

In applying HYDROCIDE Colorless, only enough material necessary to satisfy the absorption capacity of the surface should be used. Excess HYDROCIDE Colorless may result, in some instances, in a white deposit on the surface which will ordinarily weather off upon exposure.

HYDROCIDE Colorless may be applied with brush or spray, working from the top down, at temperatures above 40° F., and preferably above 60° F.

A stiff bristle or short stubby brush is recommended. Work HYDROCIDE Colorless thoroughly into the surface.

Spray HYDROCIDE Colorless at right angles to the surface, with an atomization pressure of 30 to 35 pounds and a fluid pressure of 10 to 15 pounds. Any HYDROCIDE Colorless which may run and accumulate in sills or other horizontal areas, should be thoroughly brushed out.

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

100 sq. ft. per gal., one coat.

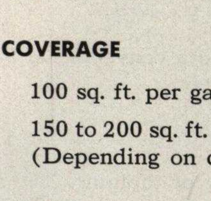
150 to 200 sq. ft. per gal., second coat.
(Depending on character of surface.)

CONTAINER SIZES

Drums, ½ drums.

5 gals., 1 gal.

PREPARATION OF SURFACE



HYDROCIDE Colorless is a liquid solution. It cannot "plug" a hole or "fill in" a crack. The successful application of HYDROCIDE Colorless depends on the proper preparation of the wall surface. All defective joints and cracks should be repointed. Windows and door frames should be tightly caulked. Parapet walls should be thoroughly sealed. (See other Sonneborn products for these purposes.)

HYDROCIDE MASTIC

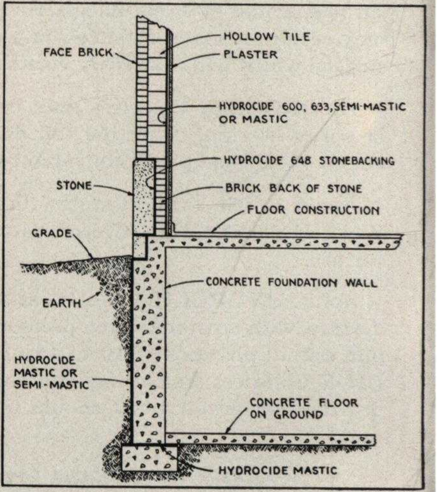
(Heavily Fibrated Asphalt)

USE

For protecting exterior porous surfaces, below grade; also as plasterbond.

DESCRIPTION

HYDROCIDE Mastic is a heavily fibrated asphalt compound reinforced with asbestos fiber. When used as directed, it produces a coating of exceptional elasticity, adhesion and toughness. It withstands temperature changes without cracking and will retain its web-like continuity as long as the structure itself remains in sound condition. HYDROCIDE Mastic is comparable in efficiency to a conventional 5-ply membrane system. Free of coal tar.



HYDROCIDE protective coatings and plaster-bonds have many important uses, as indicated in this sketch.

ADVANTAGES

- Ready to use—requires no heating or thinning.
- One coat is sufficient.
- Equal in efficiency to a conventional 5-ply membrane system.

APPLICATION

Surface to be treated must be dry and free of dust and loose particles. Best results are obtained when application is made at temperature of 40° F. or above. Use HYDROCIDE Mastic directly from container. No heating or thinning required. Apply with trowel.

1—Exterior Surfaces Below Grade

a. Apply HYDROCIDE Mastic in one coat to a thickness of at least ⅛". Make sure coating is continuous and free of breaks or pinholes. Carry HYDROCIDE Mastic over tops and edges of footings, forming a cove at junction of walls and footings; also around all joints, grooves and slots, following all breaks in the surface. Spread coating into all chases, corners, reveals and soffits of windows. Allow to set.

b. Backfill may be made about 48 hours after application of HYDROCIDE Mastic. To avoid injury to the HYDROCIDE coating, a layer of slaters-felt, membrane cloth, heavy paper, or a protective covering of cement mortar, brick or plank may be placed over entire treated surface, and fill made thereafter.

2—Interior Surfaces Above Grade
(Also as Plasterbond*)

a. Apply HYDROCIDE Mastic in one coat to a thickness of at least 1/16″. Carry the coating in and around all joints, grooves and slots, following all breaks in the surface. Carry HYDROCIDE Mastic into all chases, corners, reveals and soffits of windows. Allow to set.

b. Plastering may be done within 12 to 24 hours after application of HYDROCIDE Mastic.

NOTE: **HYDROCIDE Mastic should not be used as Plasterbond with Portland cement mixes.*

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

100 sq. ft. per 4 to 5 gals., depending on character of surface.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal.

HYDROCIDE SEMI-MASTIC

(Semi-Fibrated Asphalt)

USE

For protecting interior surfaces above grade, and exterior porous surfaces below grade; also as plasterbond.

DESCRIPTION

HYDROCIDE Semi-Mastic is a semi-fibrated asphalt compound especially formulated to enable it to produce a "modified membrane." Serves as an efficient protective film as well as a plasterbond. Superior to materials of paint-like consistency, HYDROCIDE Semi-Mastic gives a coating of exceptional elasticity, adhesion and toughness. It withstands temperature changes without cracking. Free of coal tar.

ADVANTAGES

- Ready to use—requires no heating or thinning.
- Equal in efficiency to that of a 3-ply membrane system.

APPLICATION

Surface to be treated must be dry and free of dust and loose particles. Best results are obtained when application is made at temperature of 40° F. or above. Use HYDROCIDE Semi-Mastic directly from container. No heating or thinning required. Apply with three-knot roofing brush or spray.

1—Exterior Surfaces Below Grade

a. Apply HYDROCIDE Semi-Mastic in two coats, allowing first coat to dry before applying second coat. Make sure coating is continuous and free of breaks or pinholes. Carry HYDROCIDE Semi-Mastic over tops and edges of footings; forming a cove at junction of walls and footings; also around all joints, grooves and slots. Follow all breaks in the surface. Spread coating into all chases, corners, reveals and soffits of windows. Allow to set.

b. Backfill may be made about 48 hours after application of HYDROCIDE Semi-Mastic. To avoid injury to the HYDROCIDE coating, a layer of slaters-felt, membrane cloth, heavy paper, or a protective covering of cement mortar, brick or plank may be placed over entire treated surface, and fill made thereafter.

2—Interior Surfaces Above Grade (Also as Plasterbond*)

a. Apply HYDROCIDE Semi-Mastic in one coat, carrying the coating in and around all joints, grooves and slots, following all breaks in the surface. Carry HYDRO-

CIDE Semi-Mastic into all chases, corners, reveals and soffits of windows. Allow to set.

b. Plastering may be done within 12 to 24 hours after application of HYDROCIDE Semi-Mastic.

NOTE: **HYDROCIDE Semi-Mastic should not be used as Plasterbond with Portland cement mixes.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

30 to 35 sq. ft. per gal. per coat, depending on character of surface.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal.

HYDROCIDE 600

(Asphalt Emulsion)

USE

For protecting interior surfaces above grade, and exterior surfaces below grade; also as plasterbond.

DESCRIPTION

HYDROCIDE 600 is a bituminous emulsion containing not less than 55% asphalt. It is permanently nonsettling and will not cake, harden or coalesce in containers. Its exceptional stability enables it to form a continuous coating on most porous surfaces. It is ideal for use as a chemical-resistant coating for concrete surfaces, and as a modified membrane coating for foundations. Free of coal tar.

ADVANTAGES

- Can be freely reduced with water, without separation.
- Non-inflammable—eliminates fire hazards.
- May be applied to wet or dry surfaces.

APPLICATION

Surface to be treated must be moistened with water. Application must be made at temperature of 40° F. or above. Use HYDROCIDE 600 directly from container. No heating or thinning required. Apply with three-knot roofing brush or spray.

1—Exterior Surfaces Below Grade

a. Apply HYDROCIDE 600 in two coats, allowing first coat to dry before applying second coat. (NOTE: In two-coat work, dilute first coat of HYDROCIDE 600 with 10% water. Apply second coat undiluted.) Make sure coating is continuous and free of breaks or pinholes. Carry HYDROCIDE 600 over tops and edges of footings, forming a cove at junction of walls and footing; also around all joints, groves and slots. Follow all breaks in the surface. Spread coating into all chases, corners, reveals and soffits of windows. Allow to set.

b. Backfill may be made about 48 hours after application of HYDROCIDE 600. To avoid injury to the HYDROCIDE coating, a layer of slater's-felt, membrane cloth, heavy paper, or a protective covering of cement mortar, brick or plank may be placed over entire treated surface, and fill made thereafter.

2—Interior Surfaces Above Grade
(Also as Plasterbond*)

a. Apply HYDROCIDE 600 in one coat, carrying the coating in and around all joints, grooves and slots, following all breaks in the surface. Carry HYDROCIDE 600 into all chases, corners, reveals and soffits of windows. Allow to set.

b. Plastering should be done within 12 to 24 hours after application of HYDROCIDE 600.

NOTE: **HYDROCIDE 600 should not be used as Plasterbond with Portland cement mixes.*

KEEP FROM FREEZING

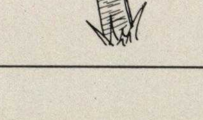
STIR WELL BEFORE USING

COVERAGE

75 to 100 sq. ft. per gal., one coat, depending on character of surface.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal.


Sonneborn Suggests...

Be Careful in Back-filling!

When applying a protective coating to surfaces below grade, care should be exercised in back-filling so as to avoid injury to the protective film.

HYDROCIDE 633

(Liquid Asphalt)

USE

For protecting dense interior surfaces, above grade; also as plasterbond.

DESCRIPTION

HYDROCIDE 633 is a specially prepared black brushing compound formulated to dry to a tacky, elastic film. This property permits plastering to be done safely as early as two days or as late as 28 days after application. Free of coal tar.

ADVANTAGES

- May be used with or without furring strips, but when furring is applied, greater safety results.
- Remains tacky for an exceptionally long period.
- Easy to apply.

APPLICATION

Surface to be treated must be dry and free of dust or loose particles. Best results are obtained when application is made at temperature of 40° F. or above. Use HYDROCIDE 633 directly from container. No heating or thinning required. Apply with three-knot roofing brush or spray.

1—Interior Surfaces Above Grade

Apply HYDROCIDE 633 in two coats, allowing first coat to dry 24 hours before applying second coat. Make sure coating is continuous and free of breaks or pinholes. Carry the coating in and around all joints, grooves and slots, and follow all breaks in the surface. Spread into all chases, corners, reveals and soffits of windows. Allow to set.

2—Plasterbond*

Follow directions as in 1, applying only one coat. When using HYDROCIDE 633 as a plasterbond, extremely smooth surfaces should be mechanically roughened prior to application.

NOTE: **HYDROCIDE 633 should not be used as Plasterbond with Portland cement mixes.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

75 to 100 sq. ft. per gal., one coat, depending on character of surface.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal.

HYDROCIDE 648

(Liquid Asphalt)

USE

For protecting exterior walls, below grade; also for stonebacking.

DESCRIPTION

HYDROCIDE 648 is a high-quality asphalt compound which serves as an effective backing for building stones set in cement. It dries to a hard, yet elastic film. Retards absorption and capillary transfer of moisture. Helps to prevent spalling and discoloration. Free of coal tar.

ADVANTAGES

- Is not affected by the lime in cement.
- Withstands temperature changes without cracking or losing continuity.

APPLICATION

Surface to be treated must be dry and free of dust and loose particles. Best results are obtained when application is made at temperature of 40° F. or above. Use HYDROCIDE 648 directly from container. No heating or thinning required. Apply with three-knot roofing brush or spray.

1—Exterior Surfaces Below Grade

a. Apply HYDROCIDE 648 in two coats, allowing first coat to dry before applying second coat. Make sure coating is continuous and free of breaks or pinholes. Carry HYDROCIDE 648 over tops and edges of footings, forming a cove at junction of walls and footing; also around all joints, grooves and slots. Follow all breaks in the surface. Spread coating into all chases, corners, reveals and soffits of windows. Allow to set.

b. Backfill may be made about 48 hours after application of HYDROCIDE 648. To avoid injury to the HYDROCIDE coating, a layer of slater's-felt, membrane cloth, heavy paper, or a protective covering of cement, mortar, brick or plank may be placed over entire treated surface, and fill made thereafter.

2—Stonebacking

Apply HYDROCIDE 648 in one coat to all stone surfaces not exposed to view. Do not handle stone until coating is thoroughly dry.

STIR WELL BEFORE USING. KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

Stonebacking: 125 to 175 sq. ft. per gal., one coat.
Other Uses: 75 sq. ft. per gal., first coat.
About 125 sq. ft. per gal., second coat.
(Depending on character of surface.)

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal.

HYDROCIDE 700

(Emulsified Mastic Compound)

USE

For protecting exterior surfaces below grade against dampness.

DESCRIPTION

HYDROCIDE 700 is an emulsion of mastic consistency containing especially refined asphalt reinforced with long-fibered asbestos, all held in suspension by mineral emulsifying and asphalt stabilizing agents. When HYDROCIDE 700 is applied to any exterior concrete, masonry or stone surface below grade, it bonds to the surface and produces an elastic, membrane-like coating that is resistant to the penetration of moisture from the soil.

HYDROCIDE 700 is also used in cold storage rooms over cork or similar insulations where it functions as a vapor barrier.

ADVANTAGES

- Ready to use—requires no heating or thinning.
- Adheres firmly to damp surfaces.
- Equal in efficiency to a conventional 5-ply membrane system.

APPLICATION

HYDROCIDE 700 is applied cold to a 1/16″ thickness with a trowel. It should be applied in a continuous coating without breaks or pinholes. Smooth surfaces should be roughened and all surfaces moistened with water before HYDROCIDE 700 is applied. *Do not apply at temperatures below 40° F.*

Carry HYDROCIDE 700 over tops and edges of footings (before concrete is poured or blocks laid), forming a cove at junction of walls and footing, also around all joints, grooves and slots. Follow all breaks in surface.

Backfill may be made 48 hours after application. Care should be exercised in backfilling to avoid injury to film. A protective covering of cement, mortar, brick or plank, or a layer of slater's-felt, membrane cloth, heavy paper or wood may be placed over treated area and fill made thereafter.

KEEP FROM FREEZING

COVERAGE

100 sq. ft. per 4 to 5 gals., depending on character of surface.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal.

FERROLITH W

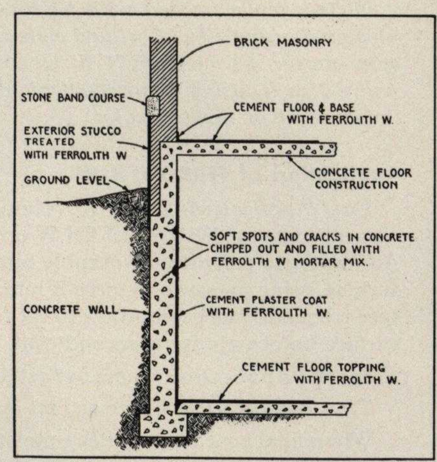
(Metallic Compound)

USE

For metallic reinforcing of interior and exterior concrete and masonry surfaces above grade and interior below grade, including walls and floors in tunnels, mines, dams and reservoirs.

DESCRIPTION

FERROLITH W is a uniformly graded, oxidizable metallic powder which reconditions and fortifies leaky and weathered concrete and masonry surfaces. Since best results with FERROLITH W depend largely upon the applicator's experience and skill, such work should be done by experienced contractors who will take all necessary precautions to produce a satisfactory job. When used as directed, FERROLITH W becomes an integral reinforcing component of the cement topping, expands upon oxidation and closes the pores of the concrete or masonry, producing a denser surface.


BRICK MASONRY
STONE BAND COURSE
CEMENT FLOOR & BASE WITH FERROLITH W.
EXTERIOR STUCCO TREATED WITH FERROLITH W
GROUND LEVEL
CONCRETE FLOOR CONSTRUCTION
SOFT SPOTS AND CRACKS IN CONCRETE CHIPPED OUT AND FILLED WITH FERROLITH W MORTAR MIX.
CONCRETE WALL
CEMENT PLASTER COAT WITH FERROLITH W.
CEMENT FLOOR TOPPING WITH FERROLITH W.

Typical interior and exterior surfaces, above and below grade, on which FERROLITH W is used for metallic reinforcing

ADVANTAGES

- Helps to prevent cracking and spalling.
- Reinforces extremely porous surfaces.
- Increases resistance of concrete and masonry to various alkalies, oils and greases.

APPLICATION

1—Walls

Surface to be treated must be roughened. Clean surface of dirt, surface coating or other loosely adherent matter. If structural defects exist, prepare surface as follows:

Preparation of Surface

a. Chip out all structural defects such as cracks, crevices, etc., to a uniform width (minimum 1″) and to a depth of about 1½″. Wet down surface with water and prime with a slush coat consisting of 1 part FERROLITH W to 1 part Portland cement (by volume). Add water to produce a workable mix. Keep treated surface moist and allow to set for 24 hours.

b. Fill in primed areas with a 2:1:3 mix (by weight) of Portland cement, FERROLITH W and clean, coarse sand, for small openings, or a 1:¼:2 mix (by weight) of Portland cement, FERROLITH W and clean, coarse sand for larger openings. Crown wet mix and trowel with surface. Keep moist for 48 hours to insure proper curing.

When treated areas are thoroughly cured, wet down surface and apply 3 brush coats of FERROLITH W with a stiff brush.

NOTE: *Walls treated with FERROLITH W may be plastered, using a ¼" Portland cement mix, or a ½" gypsum plaster. FERROLITH W treated surfaces may be painted over, using prime coat of aluminum paint and finish paint of desired color.*

Application of FERROLITH W

First Application: Mix (by volume) 1 part Portland cement to 1 part FERROLITH W until uniform in color. Add water to produce a workable mix. Brush mixture on surface, using pressure to force it into the voids. Stir mixture frequently as used. Allow to set for 24 hours and wet surface before applying second coat.

Second Application: Same as first application.

Third Application: Same as first application.

When final coat has set, keep moist for about 24 to 48 hours to insure proper curing.

2—Floors

Follow directions as in 1. While last application of FERROLITH W is still moist, lay a 1" topping (or thicker), using 5 pounds of FERROLITH W per bag of cement. A frequent source of water seepage in basements is through the joint between the wall and floor. When conditions of this nature exist, the proper procedure is to chip out and repoint joint as described under 1-a before resurfacing.

NOTE: *The above treatments are adequate where normal pressures exist. Where higher and varied hydrostatic pressures are encountered, more than 3 brush coats of FERROLITH W may be necessary.*

IMPORTANT—FERROLITH W, when properly used, should give satisfactory results. The quality of the material is standard in every respect. However, the manufacturer cannot be liable for any failure on the part of FERROLITH W, whether it is used for remedial work or on new work, inasmuch as the results obtained depend upon the experience and skill of the mechanic using FERROLITH W. It is urged that in special cases the job be delegated to an experienced contractor.

COVERAGE

40 lbs. per 100 sq. ft., 3 brush coats.
(Depending on character of surface.)

CONTAINER SIZE

100 lb. bags.

KAUKIT

USE

Caulking around window and door frames.

Filling and waterproofing cracks, crevices and joints in concrete, stone and brick.

Waterproofing flashings around chimneys, cornices and coping walls.

Glazing and imbedding greenhouse lights, skylights, steel sash, and glass domes in sidewalks.

Sealing and waterproofing crevices around sinks, bathtubs, etc., and holding tiles in place.

DESCRIPTION

KAUKIT represents the finest in plastic materials intended to supply efficient protection and long-lasting adhesion to any surface — wood, metal, glass, concrete, stone, oakum or similar fibrous filler. This top-quality material, which has given satisfactory service for more than 30 years, remains elastic underneath its tough, weather-resisting surface film, so that neither expansion or contraction due to temperature changes, nor normal building vibration will impair its efficiency. KAUKIT does not sag, slump or run out of vertical or inclined joints.

ADVANTAGES

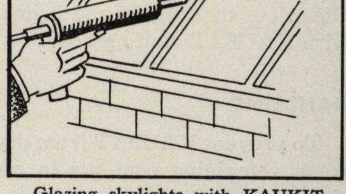
- Ready to use—requires no heating, mixing or thinning.
- Easily workable—KAUKIT will not "stick" to caulking tool—makes placement work easier.
- Non-staining—will not discolor light masonry surfaces.
- Color-fast—KAUKIT colors will show little or no fading after long periods of use.
- Will not turn brittle or harden, like putty.
- Can be painted over.

APPLICATION

1—Caulking Wood and Metal Frames

Openings between frames and masonry should be at least ½″ to ¾″ deep. Deeper openings should be packed within ½″ of surface with oakum prior to caulking with KAUKIT.

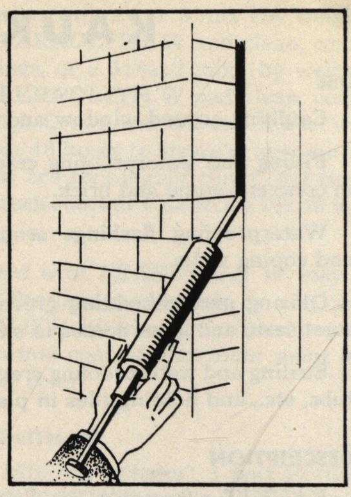
a. Wood — Remove staff beads. Rake and clean thoroughly all



Glazing skylights with KAUKIT

openings between wood or metal in masonry, including heads, sides and sills. Fill in open spaces with KAUKIT and replace staff beads.

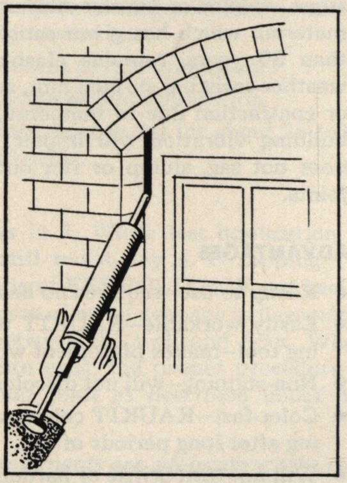
b. Metal – Where casings are set, proceed as in 1-a. Where frames are to be set into position, apply KAUKIT over inside edge of masonry or frame. Press and place frame into position and proceed as under 1-a.



Caulking around door frames with KAUKIT

2–Glazing, Bedding or Setting Glass

Use KAUKIT in the same manner as putty, moistening knife with linseed oil before using. New frames must be primed, and old frames must be scraped and sash repainted before glazing.



Caulking around window frames with KAUKIT

3–Pointing Up Joints, Sealing Cracks in Plaster Walls

Rake out joints or cracks to a depth of ¾″ and clean out thoroughly. Where surface of crack or joint is porous, seal surface with HYDROCIDE Colorless or shellac before caulking. Fill in joint or crack with KAUKIT (knife grade recommended) ⅛″ beyond surface and thoroughly compress compound into openings.

4–Caulking Cracks in Concrete

Cut or rake out cracks to about ½″ wide by ¾″ deep. Clean out thoroughly and prime surfaces as in 3. Fill in with KAUKIT, knife grade.

HANDLING

To prevent KAUKIT from drying out when not in use, cover remaining contents in can with water and keep closed.

GUNS

Use KAUKIT Caulking Gun – two sizes available: No. 32, 2″ x 10″ (may be adapted for regular size); No. 45, 2″ x 15″.

CAUTION: Combustible Mixture; C. of A. No. 1529

KEEP AWAY FROM OPEN FLAME

GRADES

Gun and knife grades. Also cartridges.

COLORS

Natural, Gray, White and Black.
In Cartridges, White and Gray only.

COVERAGE

Gun Grade: 150 linear ft. per gal.

Knife Grade: 15 to 25 linear ft. per pound.

Cartridges: 15 linear ft. per cartridge.
(Based on joints of average depth and width.)

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt., Cartridges.

MARVELWITE

Special Fume and Heat-Resistant Coatings for Industry

MARVELWITE T (Enamel)
MARVELWITE S (Semi-Gloss)
MARVELWITE UNDERCOAT

USE

For interior concrete, masonry, metal and wood walls, ceilings and trim in all types of industrial establishments including bakeries, dyehouses, bleacheries, laundries, creameries, ice plants, hospitals, chemical manufacturing plants, tanneries, garages and laboratories.

DESCRIPTION

The MARVELWITES are synthetic white coatings specially designed for industrial interiors. Containing non-yellowing synthesized oils and pigments of high tinctorial strength and maximum color retention, the MARVELWITES are highly resistant to corrosive fumes and vapors—retain their initial whiteness and gloss for unusually long periods.

MARVELWITES are available in two types:

MARVELWITE T—high-gloss enamel
MARVELWITE S—semi-gloss

MARVELWITE Undercoat is also available for priming surfaces prior to application of the MARVELWITES.

TYPICAL INDUSTRIAL USES

In many industries, manufacturing processes create severe conditions with which an ordinary paint cannot contend. The MARVELWITES, however, are specially designed to give maximum satisfaction under such adverse conditions because of their outstanding ability to withstand the effects of moisture, heat (up to 200° F.), chemical fumes and vapors. The type of MARVELWITE to be used in typical industries where such conditions are encountered is indicated in the following list:

Industry	*Type of MARVELWITE*
BAKERIES	T or S
DYEHOUSES	S
BLEACHERIES	S
LAUNDRIES	T
CREAMERIES	T or S
ICE PLANTS	S
HOSPITALS	T or S

Industry	*Type of MARVELWHITE*
CHEMICAL MANUFACTURING PLANTS	
—ammonia fumes	S
—carbon dioxide fumes	T or S
—acid fumes	T or S
—hydrogen sulfide	T
—nitrous oxide	T
—sulfuric dioxide	T or S
TANNERIES	S
GARAGES	T
LABORATORIES	T or S

MARVELWITE T is also recommended for use as a white machinery enamel.

COLOR

White—may be tinted to light shade of desired color by adding a small amount of pure color in oil.

ADVANTAGES

- Stay white—highly resistant to yellowing and loss of gloss.
- Withstand effects of moisture, heat, chemical fumes and vapors.
- Possess high light reflectance and diffusion values.
- High opacity (hiding)—one coat covers any reasonably clean painted surface.
- Brush and spread easily — flow freely and level off without brush marks or laps—do not sag.
- Dry tack-free in about 7 hours and hard in 18 hours.
- Washable—do not streak or discolor.
- Resistant to transient contact with greases and oils.

HOW TO USE

Stir and box MARVELWITE before using. Apply with brush or spray.

1—New or Unpainted Porous Surfaces (Concrete, Brick, Plaster, Wood, Wallboard).

Newly finished concrete, brick, and plaster surfaces (when dry) should be washed down with zinc sulfate solution (2 to 4 lbs. of zinc sulfate crystals per gallon of water) and allowed to dry for at least 36 hours. Surfaces to be painted must be thoroughly dry, clean and free of loosely adherent matter. Wood surfaces must be free of mildew, wax and grease. Apply MARVELWITE (T or S) as follows:

a. *Three-Coat Work*

First Coat: Apply MARVELWITE Undercoat (pigmented primer and sealer). Allow to dry 24 to 48 hours.

Second Coat: Apply **MARVELWITE** Undercoat. Allow to dry 24 to 48 hours.

Third Coat: Apply **MARVELWITE** T or S.

b. Two-Coat Work

Proceed as in three-coat work, eliminating the second coat of **MARVELWITE** Undercoat.

2—New or Unpainted Metal Surfaces

Surface to be painted should be clean, dry and free of mill scale, rust and grease. Apply **MARVELWITE** as follows:

First Coat: Apply **MARVELWITE** Undercoat. Allow to dry 24 to 48 hours.

Second Coat: **MARVELWITE** T or S.

3—Previously Painted Surfaces

Surface to be painted should be clean and dry. Wire-brush to remove loose particles. Sand smooth surfaces with No. 00 sandpaper.

a. Light-colored Surfaces in Good Condition

Apply one or more coats of **MARVELWITE** T or S, allowing at least 24 hours drying time between coats.

b. Dark-Colored Surfaces

First Coat: Apply **MARVELWITE** Undercoat. Allow to dry 24 to 48 hours.

Second Coat: **MARVELWITE** T or S.

c. Badly Worn Surfaces

First Coat: Apply **MARVELWITE** Undercoat. Allow to dry 24 to 48 hours.

Second Coat: **MARVELWITE** T or S.

THINNING

MARVELWITE may be thinned by the addition of not more than one pint of turpentine per gallon. Do not use oil or varnish.

NOTE: *Unpainted Wolmanized lumber or similarly treated wood should be given a coat of Sonneborn's SONOLASTIC Aluminum Paint before applying MARVELWITE T or S as outlined in 1a.*

Before applying MARVELWITE T or S as outlined in 2 to new or unpainted metal surfaces subject to corrosion, prime with Sonneborn's S.R.P. 75 and allow to dry.

KEEP AWAY FROM OPEN FLAME.

COVERAGE

ONE COAT: 400 to 500 sq. ft. per gal., depending on porosity.

CONTAINER SIZES

Drums, 5 Gals., 1 Gal., 1 Qt.

CEMCOAT INTERIOR FLAT

USE

For all interior walls and ceilings including cement, brick, plaster, wood, wallboard and metal.

DESCRIPTION

CEMCOAT Interior Flat is a superior oil-base coating that enjoys exceptional popularity wherever light reflection and the ability to withstand frequent washings are necessary qualities for economical maintenance. Free of gums which make ordinary paint brittle. Dries to a smooth, even-textured film without crazing or checking. The exclusive Sonneborn treatment of the oils used in CEMCOAT Interior Flat assures their oxidation without discoloration.

Power plants are typical of many types of buildings where interiors are made cleaner, brighter and easier to maintain with CEMCOAT Interior Flat

COLOR

White—may be tinted to any desired shade by adding colors in oil.

ADVANTAGES

- Free flowing—holds a wet edge, minimizing the danger of lapping.
- Better light reflection.
- High opacity.
- Greater spreading capacity.
- Withstands frequent washings without smudging.
- Durable—economical.

APPLICATION

Stir or box CEMCOAT Interior Flat thoroughly before using. Apply with brush or spray.

1—New or Unpainted Porous Surfaces (Concrete, Brick, Plaster, Wood, Wallboard)

Newly finished concrete, brick, and plaster surfaces (when dry) should be washed down with a zinc sulfate solution (2 to 4 lbs. of zinc sulfate crystals per gallon of water) and allowed to dry for 36 hours. Surface to be painted must be thoroughly dry, clean and free of loosely adherent matter. Wood surfaces must be clean of mildew, wax or grease. Apply CEMCOAT Interior Flat as follows:

a. *Three-Coat Work*

First Coat: Apply HIDE-N-SEAL, Sonneborn's pigmented primer and sealer. Allow to dry 24 to 48 hours.

Second Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.

Third Coat: Apply CEMCOAT Interior Flat.

b. *Two-Coat Work*

Proceed as in three-coat work, eliminating the second coat of HIDE-N-SEAL.

2—New or Unpainted Metal Surfaces

Surface to be painted should be clean, dry, and free of mill scales, rust or grease. Apply CEMCOAT Interior Flat as follows:

First Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.

Second Coat: CEMCOAT Interior Flat.

3—Previously Painted Surfaces

Surface to be painted should be clean and dry. Wire-brush to remove loose particles.

a. *For Light-Colored Surfaces in Good Condition.*
One coat of CEMCOAT Interior Flat is sufficient.

b. *For Dark-Colored Surfaces*
First Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.
Second Coat: CEMCOAT Interior Flat.

c. *For Badly Worn Surfaces*
First Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.
Second Coat: CEMCOAT Interior Flat.

d. *For Whitewashed or Cold Water-Painted Surfaces*
First Coat: Apply HIDE-N-SEAL, reduced with one quart of boiled linseed oil per gallon. Allow to dry 48 hours.
Second Coat: CEMCOAT Interior Flat.

THINNING

CEMCOAT Interior Flat may be thinned by the addition of one pint of turpentine per gallon. Do not use oil or varnish.

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

500 to 600 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

WONDERCOTE

(Semi-Paste)

The Amazing Oil-Base Interior Flat Paint

USE

Primes—seals—finishes interior wall and ceiling surfaces including brick, concrete, plaster, wood, casein, calcimine, and wallpaper.

DESCRIPTION

WONDERCOTE is an oil-base paint of semi-paste consistency which primes, seals and finishes most surfaces in one application. Formulated to give controlled penetration, WONDERCOTE provides a brighter, cleaner and more even-textured film with easier brushing and greater coverage. WONDERCOTE sets solidly in one hour and dries to a velvet-like angular sheen in about eight hours.

COLOR

White—can be tinted to any desired shade by adding alkali-resistant colors in oil.

ADVANTAGES

- Saves 47 to 64% in materials alone as compared to the two-coat and three-coat systems.
- Exceptional hiding power—good leveling.
- Superior light reflectivity.
- Will not streak, crawl or become spotty under reasonable temperature changes.
- Can be extended to provide 37½% more paint by thinning.
- Easily washable—won't smudge.
- Leaves no tell-tale brush marks.
- Greater resistance to lime than conventional paints.

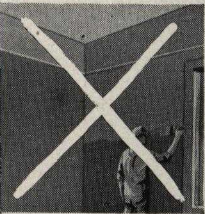
APPLICATION

WONDERCOTE is applied with brush or spray. One gallon of WONDERCOTE should be thinned with 3 pints of mineral spirits or turpentine. Thinner should be added gradually while stirring constantly. Apply WONDERCOTE in one coat, preparing the surface as indicated below:

1—Brick, Concrete, Plaster, Wood

Surface to be painted must be clean, dry, and free of dirt, oil or loose particles. Wire-brush, sand or scrape, if necessary, to remove adherent paint particles. New brick, concrete and plaster finished surfaces

Wondercote Saves Application Time



No primer

No undercoat

(when dry) should be neutralized by washing down with a zinc sulfate solution (2 to 4 lbs. of zinc sulfate crystals per gallon of water) and allowed to dry for 36 hours before painting.

2—Wallboard

Remove dirt and loose particles, as in 1.

3—Casein and Calcimine

Surface to be painted must be clean, as specified under 1, and dust removed with a damp cloth. Make certain that previous coating is firmly bonded to the wall.

4—Wallpaper

When painting over wallpaper, make sure that the wallpaper tightly adheres to the wall. Apply the following test to determine whether the imprinted design is soluble in paint. Dampen a cloth with mineral spirits and rub over the imprinted design. If color spreads on cloth or the surface becomes discolored, it indicates that the wallpaper is soluble and should not be painted. If the design is unaffected, the wallpaper may be painted. However, before painting be sure to remove any loosely adherent paper and wash surface underneath. Allow washed surfaces to dry and apply one coat of WONDERCOTE.

NOTE: *Gold or silver leaf paper designs may bleed through one coat, indicating that a second coat is necessary.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

600 to 700 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal.

How WONDERCOTE Saves 47 to 64% in Materials Alone

Wall Area To Be Painted In Square Feet	2 Coat System Wood Gallons Required		Total Gallons Required With 2 Coat System	**WONDER-COTE (One Applica-tion) Gallons Required**	**Total Gallons Saved When Wonder-cote Is Used**	2 Coat System Plaster, Concrete Brick or Wallpaper Gallons Required		Total Gallons Required With 2 Coat System*	**WONDER-COTE (One Applica-tion) Gallons Required**	**Total Gallons Saved When Wonder-cote Is Used**
	Primer	Finish				Primer	Finish			
6,000	8.62	8.83	17.45	**9.15**	**8.30**	9.75	10	19.75	**9.40**	**10.35**
12,000	17.24	17.66	34.90	**18.30**	**16.60**	19.50	20	39.50	**18.80**	**20.70**
18,000	25.86	26.49	52.35	**27.45**	**24.90**	29.25	30	59.25	**28.20**	**31.05**
24,000	34.48	35.32	69.80	**36.60**	**33.20**	39.00	40	79.00	**37.60**	**41.40**
30,000	43.10	44.15	87.25	**45.75**	**41.50**	48.75	50	98.75	**47.00**	**51.75**

*Approximate figures based on porosity of surface. Savings in materials will be substantially greater with WONDERCOTE over the normal 3-coat job.

CEMCOAT ENAMEL GLOSS

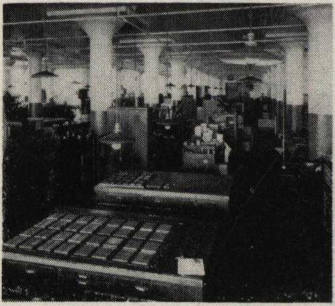
USE

For all interior walls, ceilings, and trim.

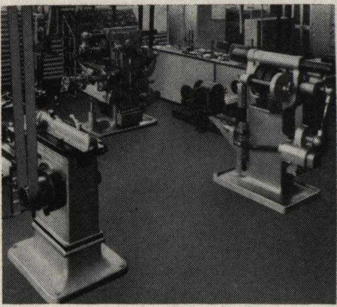
DESCRIPTION

CEMCOAT Enamel Gloss is a specially processed coating particularly suited to industrial plants and factories operating under high temperatures. Carefully blended with light-fast pigments of high tinctorial value and a vehicle which permits uniform pigment dispersion. CEMCOAT Enamel Gloss remains uniformly attractive longer and leaves a tough, smooth finish that is highly resistant to steam and moisture without cracking or peeling. Its extraordinary light reflecting capacity diffuses the light from natural and artificial sources evenly over a wide area without producing an objectionable glare.

How CEMCOAT Increases Production Efficiency



Better light reflection and increased visibility are obtained in printing plants and machine shops with CEMCOAT Enamel Gloss



COLOR

White—may be tinted to any desired shade by adding colors in oil.

ADVANTAGES

- Dries to an even-textured film overnight.
- Retains color longer without yellowing.
- Easily washable without streaking or staining.
- High hiding power.
- Flows freely—spreads easily.
- Can be applied over surfaces previously painted, whitewashed, or coated with cold-water paint.

APPLICATION

Stir or box CEMCOAT Enamel Gloss thoroughly before using. Apply with brush or spray.

1—New or Unpainted Porous Surfaces (Concrete, Brick, Plaster, Wood, Wallboard)

Newly finished concrete, brick, and plaster surfaces (when dry) should be washed down with a zinc sulfate solution (2 to 4 lbs. of zinc sulfate crystals per gallon of water) and allowed to dry for 36 hours. Surface to be painted must be thoroughly dry, clean and free of loosely adherent matter. Wood surfaces must be clean of mildew, wax or grease. Apply CEMCOAT Enamel Gloss as follows:

a. *Three-Coat Work*

First Coat: Apply HIDE-N-SEAL, Sonneborn's pigmented primer and sealer. Allow to dry 24 to 48 hours.

Second Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.

Third Coat: Apply CEMCOAT Enamel Gloss.

b. *Two-Coat Work*

Proceed as in three-coat work, eliminating the second coat of HIDE-N-SEAL.

2—New or Unpainted Metal Surfaces

Surface to be painted should be clean, dry, and free of mill scales, rust or grease. Apply CEMCOAT Enamel Gloss as follows:

First Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.

Second Coat: CEMCOAT Enamel Gloss.

3—Previously Painted Surfaces

Surface to be painted should be clean and dry. Wire-brush to remove loose particles.

a. *For Light-Colored Surfaces in Good Condition*

One coat of CEMCOAT Enamel Gloss is sufficient.

b. *For Dark-Colored Surfaces*

First Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.

Second Coat: CEMCOAT Enamel Gloss.

c. *For Badly Worn Surfaces*

First Coat: Apply HIDE-N-SEAL. Allow to dry 24 to 48 hours.

Second Coat: CEMCOAT Enamel Gloss.

d. *For Whitewashed or Cold Water-Painted Surfaces*

First Coat: Apply HIDE-N-SEAL, reduced with one quart of boiled linseed oil per gallon. Allow to dry 48 hours.

Second Coat: CEMCOAT Enamel Gloss.

THINNING

CEMCOAT Enamel Gloss may be thinned by the addition of not more than one pint of turpentine per gallon. Do not use oil or varnish.

STIR WELL BEFORE USING
KEEP AWAY FROM OPEN FLAME

COVERAGE

Sq. ft. per gal., one coat: Brick and Concrete — 250; Plaster—300; Wood—350; Metal—400.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

CEMCOAT EXTERIOR HOUSE PAINT

(Primer and Gloss)

USE

For priming and finishing exterior wood and metal surfaces.

DESCRIPTION

CEMCOAT Exterior House Paint is an improved oil-base coating formulated on a different principle from ordinary exterior house paints. Used as directed, it gives a highly satisfactory, dependable, exposure-resistant finish, using only two coats in contrast to the three coats which in the past were generally regarded as necessary. Tests show that this balanced formula will outlast ordinary house paints. Available in two consistencies: Primer and Gloss.

COLOR

White only. Do not Tint.

ADVANTAGES

- Ready to use—requires no thinning.
- Flows freely—spreads easily.
- Exceptional hiding power.
- Easy to maintain.
- Economical—does away with at least one finish coat.
- Withstands weathering for long periods of time.
- Exceptional resistance to checking and peeling.
- Provides a self-cleaning surface.

APPLICATION

Surface to be painted must be thoroughly dry and free of dust or soot. Glossy surfaces should be sanded down. Do not paint at temperatures below 50° F., or in damp, foggy, rainy or frosty weather. Apply with brush or spray. Do not tint. Prime knotty or resinous areas with shellac.

1—New or Unpainted Wood Surfaces

First Coat: CEMCOAT Exterior House Paint Primer. If easier brushing is desired, thin, using up to one pint of pure turpentine per gallon of Primer. After priming, fill in nail holes and cracks. (For this purpose Sonneborn's KAUKIT is recommended.) Allow Primer to dry for several days.

Second Coat: CEMCOAT Exterior House Paint Finish, in consistency as furnished. Thin, as above, if easier brushing is desired.

2—Badly Worn Painted Wood Surfaces

Remove old paint which may be peeling, scaling or blistering by scraping or burning. Apply CEMCOAT Exterior House Paint, Primer and Finish, as specified in 1.

3—Painted Surfaces in Good Condition

First Coat: Paint bare areas with CEMCOAT Exterior House Paint Primer, thinned with up to one pint of pure turpentine per gallon if easier brushing is desired. Allow to dry several days.

Second Coat: CEMCOAT Exterior House Paint Finish, as furnished. Thin, using up to one pint of pure turpentine per gallon, if easier brushing is desired.

STIR WELL BEFORE AND DURING USE

KEEP AWAY FROM OPEN FLAME

COVERAGE

Primer: 600 to 700 sq. ft. per gal., one coat.
Finish: 600 to 700 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

CEMCOAT EXTERIOR FLAT

USE

For exterior brick, cement and stucco surfaces.

DESCRIPTION

CEMCOAT Exterior Flat is a carefully prepared flat coating designed to give maximum exposure service. It not only stands up exceptionally well under weathering—it actually tends to seal itself against the ruinous action of the lime in cement, stucco or brick surfaces, a condition which destroys most ordinary exterior paints.

COLOR

White—can be tinted to any desired shade by adding pure colors in oil.

ADVANTAGES

- Exceptional hiding power.
- Withstands heat, cold, salt water spray, wind and sleet.
- Retains color fastness for long periods of time.

APPLICATION

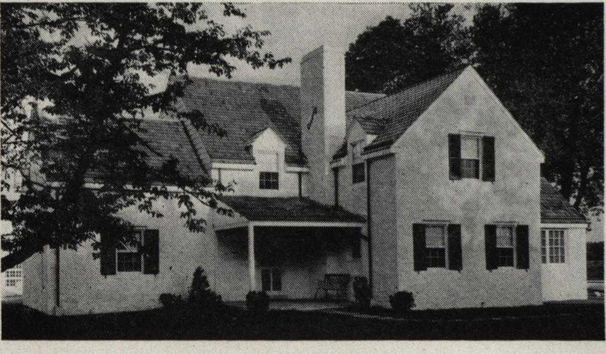
Surface to be treated must be dry, free of dust, dirt, paint scales, oil or grease spots. Cracks and crevices should be pointed up and allowed to dry before painting. Do not paint in foggy or frosty weather. Apply only when temperature is above 50° F.

1—New Work

Two coats should be applied, using a stiff bristle brush to work paint into surface pores.

First Coat: Apply CEMCOAT Exterior Flat as furnished.

Second Coat: Apply CEMCOAT Exterior Flat as furnished.



Wood surfaces coated with CEMCOAT Exterior House Paint and brick, cement and stucco with CEMCOAT Exterior Flat.

NOTE: *If a third coat is required, apply CEMCOAT Exterior Flat in the same manner as second coat.*

2—Repainting

Porous surfaces which have not been painted for some time should be treated with two coats, following directions for new work. Where surface is in reasonably good condition, a single coat of CEMCOAT Exterior Flat used without reduction is usually adequate. Apply liberally and evenly, and do not brush out too far. Work well into all pores and cracks, using a stiff bristle brush.

3—Porous Surfaces (Cinder Block, etc.)

First Coat: Apply CEMCOAT Exterior Flat as furnished.

Second Coat: Apply CEMCOAT Exterior Flat as furnished.

NOTE: *If easier brushing is desired in painting new surfaces or repainting old surfaces, CEMCOAT Exterior Flat may be thinned, using one pint of mineral spirits per gallon of paint.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

Brick, cement and stucco: 150 to 200 sq. ft. per gal., two coats.

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal., 1 qt.

S. R. P.

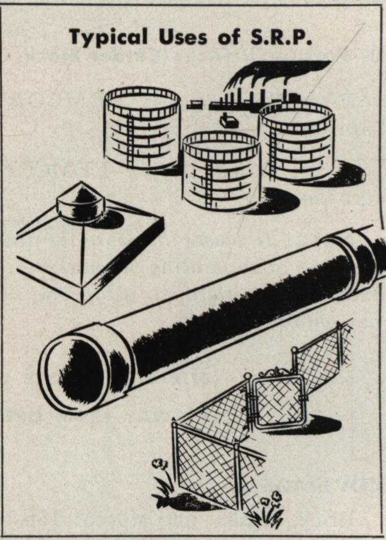
"Sure Rust Prevention"

USE

For priming and finishing iron, steel, galvanized iron, other new and old metal surfaces, inside and out.

DESCRIPTION

S. R. P. is a specially formulated protective coating containing an active corrosion inhibitor of the chromate type, and an inert micronized, flaky iron ore dispersed in a specially treated oil vehicle. Developed specifically to stop corrosion, S. R. P. stays on the job and prevents its further formation for long periods. Laboratory tests show that S. R. P. actually penetrates through and combines with the previously formed rust on old work to form a firm, long-lasting bond with the clean metal beneath. It prevents the formation of pin-holes and has the elastic qualities necessary to counteract the effects of expansion and contraction of the metal.


Typical Uses of S.R.P.

ADVANTAGES

- Superior in rust-inhibitive efficiency and chemical resistance.
- Non-toxic—eliminates red lead painting hazards.
- Highly resistant to moisture, salts, acid and alkali vapors in normal industrial concentrations.
- Dries to a smooth finish in about 18 hours.
- Firm rust need not be removed.
- Easy to apply—no expensive preparation is needed.

APPLICATION

Surface to be treated must be clean, dry and free of oil, grease or loosely adherent mill scales. Heavy or thick accumulations of rust should be removed by wire-brushing and scraping. Firmly adherent rust can be painted over directly. S.R.P. may be applied with brush or spray. Best results are obtained when application is made at temperature above 50° F.

1—New Metal Surfaces (Except Galvanized Metal)

First Coat: S.R.P. 75. Allow to dry 24 to 72 hours, depending on atmospheric conditions.

Second Coat: S.R.P. 87.

2—Galvanized Metal Surfaces

New galvanized metal surfaces must be free of oil, grease or loosely adherent mill scale. Surface to be painted should be etched with a copper sulfate solution (½ to 1 pound of copper sulfate crystals dissolved in a gallon of water acidified with 1 or 2 ounces of commercial muriatic acid). Prepare the solution in an earthen-ware container and apply with a cloth or brush. After surface blackens, rinse with water and allow to dry. Apply S.R.P. as follows:

First Coat: S.R.P. 75. Allow to dry 24 to 72 hours, depending on atmospheric conditions.

Second Coat: S.R.P. 87. (Treat old galvanized metal surfaces as in 3 or 4.)

3—Badly Corroded Metal Surfaces

Surface to be treated must be clean and free of grease, paint scale or thick accumulations of rust. Firm rust need not be removed.

First Coat: S.R.P. 75. Allow to dry 24 to 72 hours, depending on atmospheric conditions.

Second Coat: S.R.P. 87.

4—Painted Surfaces in Good Condition

Use S.R.P. 75 to touch up areas where rust has either broken through or is threatening to break the old paint film. Allow to dry thoroughly before applying S.R.P. 87.

NOTE: *S.R.P. 75 is not intended for use as a finish coat on exterior surfaces but should be covered with a finish coat of S.R.P. 87 or other suitable Sonneborn finish. On interior surfaces S.R.P. 75 may be applied in one coat where color is not a special factor.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COLORS

Red for priming (S.R.P. 75); Red, Black, Gray, Light Green, Medium Green, Light Red and Aluminum for finish (S.R.P. 87).

COVERAGE

500 to 600 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

SONOLASTIC ALUMINUM PAINT

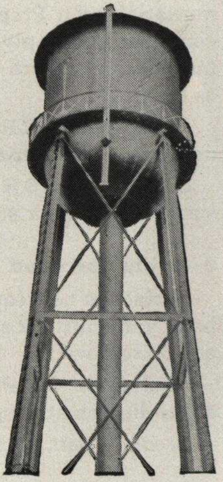
(Ready-Mixed)

"It's the vehicle that makes this coating wear longer"

USE

For all interior and exterior surfaces where temperatures do not exceed 200° F.

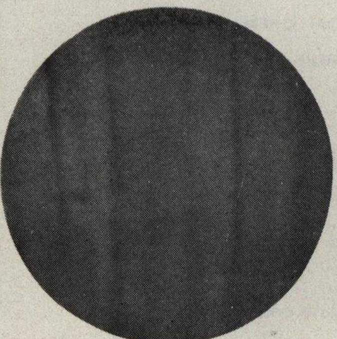
DESCRIPTION



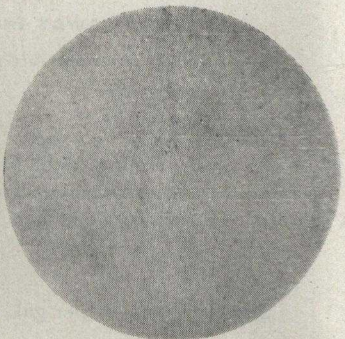
SONOLASTIC Aluminum Paint owes its long record of superior performance to the proper combination of fine "leafing" aluminum pigment with a specially formulated vehicle of exceptional penetrative, preservative and water-resisting qualities. As it sinks into the sub-surface, the vehicle draws over it countless numbers of flat, finely divided scales which quickly overlap and tightly interlock in a smooth, continuous, highly impermeable film, comparable in durability to that of the metal itself.

ADVANTAGES

- Highly resistant to moisture, corrosion, chemical fumes, gases, vapors and actinic rays of the sun.
- Ready to use—needs no special preparation.
- Finish is brilliant, and stays brilliant.
- Better "leafing" assures continuity, uniformity of film and absence of pin holes.
- Greater coverage.
- Retains leafing qualities even after prolonged storage.



Here's the kind of film an inferior vehicle produces. Note dull, flat, streaky texture. Such a film will have little, if any, durability



Here's the kind of film the SONOLASTIC Aluminum vehicle produces. Maximum leafing assures continuity and absence of porosity

APPLICATION

These storage tanks are typical of many outdoor surfaces protected against fumes, gases and vapors with SONOLASTIC Aluminum

SONOLASTIC Aluminum Paint should be stirred well or boxed before using. Apply with brush or spray. Best results are obtained when application is made at temperatures of 50° F. or above.

Surface to be painted must be thoroughly clean, dry, and free of grease, moisture, rust, loose paint scale, etc. Metal should be cold.

1—New Work

a. Concrete, Wood, and Masonry Surfaces

First Coat: SONOLASTIC Aluminum Paint as furnished. Allow to dry 24 hours.

Second Coat: SONOLASTIC Aluminum Paint as furnished.

b. Metal Surfaces

First Coat: S.R.P. 75 (Sonneborn's rust-inhibitive primer). Allow to dry 48 hours.

Second Coat: SONOLASTIC Aluminum Paint as furnished.

2—Old Work

In repainting all types of surfaces where the previous coating is in good condition, one full-bodied coat of SONOLASTIC Aluminum Paint is generally satisfactory.

NOTE: *For interior surfaces such as boiler fronts, ovens, etc., which are subjected to temperatures up to 600° F., SONNEBORN'S Heat-Resisting Aluminum Paint is recommended.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

Smooth Metal: 500 to 600 sq. ft. per gal., one coat.

Porous Surfaces—cement, plaster, brick: 300 to 400 sq. ft. per gal., one coat.

Priming new cement, plaster and brick: 150 to 200 sq. ft. per gal., one coat (to be finished off with a second coat).

CONTAINER SIZES

5 gals., 1 gal., 1 qt.

SONNEBORN'S HEAT-RESISTING ALUMINUM PAINT

(Ready-Mixed)

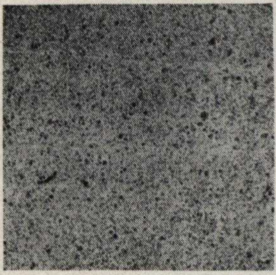
USE

For interior metal surfaces exposed to temperatures to 600° F.

DESCRIPTION

SONNEBORN'S Heat-Resisting Aluminum Paint is a skillfully prepared protective coating especially developed to withstand temperatures up to 600° F. Designed to give perfect adhesion, its special vehicle enables the aluminum pigment to bond to hot metal surfaces without cracking or peeling off. It permits the coating to expand and contract with the surface. Maintains a bright finish and withstands steam and vapors.

Here's the kind of film an inferior vehicle produces. Note the burned-off texture of the film. Soon it will start to blister, crawl and peel off



Here's the kind of film Sonneborn's Heat - Resisting Aluminum vehicle produces. Note the closely formed aluminum "leaf," the absence of pinholes

ADVANTAGES

- Resists temperatures up to 600° F.
- Highly resistant to moisture, corrosion and fumes.
- Ready to use—needs no special preparation.
- Dries to touch within four to five hours.
- Flows freely—spreads smoothly.

APPLICATION

SONNEBORN'S Heat-Resisting Aluminum Paint may be applied with brush or spray. Stir or box paint thoroughly before using.

Surface to be painted must be clean, dry, free of grease, rust and loose paint scales. Wire-brush the surface to approach the bare metal as near as possible in order to secure better adhesion of the paint. No priming is necessary.

Best results are obtained by painting the surface while it is cold, allowing paint to dry before turning on the heat.

However, if it is necessary to apply SONNEBORN'S Heat-Resisting Aluminum Paint to hot surfaces, such as a boiler front in operation, the spray method is recommended. When application is made with brush, brush strokes should be made in the same direction for uniform appearance.

Whether one or two coats of SONNEBORN'S Heat-Resisting Aluminum Paint are necessary will depend on condition of surface prior to application.

NOTE: *For painting interior and exterior surfaces subject to temperatures up to 200° F., SONOLASTIC Aluminum Paint (Ready-Mixed) is recommended.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

500 to 600 sq. ft. per gal., one coat.

CONTAINER SIZES

5 gals., 1 gal., 1 qt.

Tips on Painting

When painting over fresh plaster, the plaster should be neutralized with a zinc-sulfate solution (2 to 4 pounds of zinc-sulfate crystals per gallon of water) and allowed to dry out thoroughly before applying finish coat. This procedure will minimize any saponification of the paint film due to free lime in the plaster.

* * *

When applying paint to any surface, be sure to brush the paint out well in a thin film. This will eliminate wrinkling and sagging of the paint film.

* * *

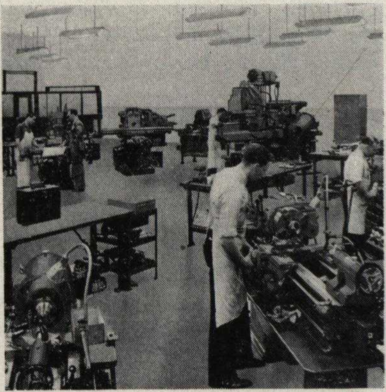
In two-coat paint work, allow first coat to dry thoroughly before applying second coat. This practice will insure against lifting or softening of the first coat. The same procedure holds true when three-coat paint jobs are required. The second coat should be allowed to dry thoroughly before applying third coat.

SONNEBORN'S METAL PROTECTIVE ENAMEL

USE

For all interior metal surfaces, including machinery, machine parts, equipment and piping.

DESCRIPTION



Machines and machine parts coated with Sonneborn's Metal Protective Enamel contribute to increased visibility, safety and output

SONNEBORN'S Metal Protective Enamel is a durable gloss coating composed of high-color retention pigments ground in a varnish vehicle. Extremely tough, yet elastic, it adheres to metal surfaces for long periods and satisfactorily withstands the shocks and vibrations of machinery and equipment without cracking or flaking. It not only adds color to drab working surroundings, but also serves as a decorative "signal beacon" on the danger zones of machine parts.

COLORS

Vermilion, Blue-Gray, White and Black.

Available in 50-gallon minimum in Accent Buff, Smoke Gray, Battleship Gray, Lawn Green, Medium Green, Olive Green, Brewster Green. Blue, Yellow and Orange.

ADVANTAGES

- Dries to a glossy, uniform finish in six to eight hours.
- Resistant to oil, water and grease.
- Will not stain easily.
- Washable.

APPLICATION

Surface to be painted must be dry, clean, and free of dirt, grease or oil. Apply with brush or spray.

1—New Machines

New machines should first receive a coat of metal filler, well smoothed out, to fill in all pores and pittings. Apply one flow coat of SONNEBORN'S Metal Protective Enamel and follow with a second coat after first coat has dried.

2—Repainting Machines

Where the old finish is in fair condition, one coat should be sufficient. Otherwise, two are necessary. On two-coat work, the first coat seals the surface, the second coat gives a uniform, protective and decorative finish.

3—Piping

Apply one or two coats, depending upon the condition of the pipe. Apply smooth, even coats. Do not brush out too much and do not overlap.

THINNING

Apply SONNEBORN'S Metal Protective Enamel in consistency as furnished. Should thinning be required, add a small amount of pure turpentine to the desired brushing or spraying consistency.

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

400 to 500 sq. ft. per gal., one coat.
250 to 300 sq. ft. per gal., two coats.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

Don't Paint "Green" Wood!

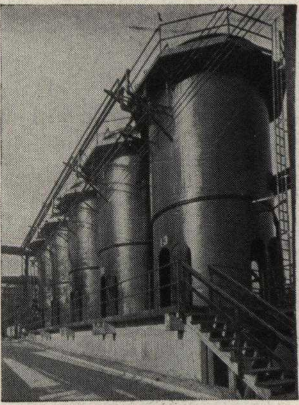
Do not paint over damp or "green" wood. Such procedure will cause blistering, cracking, scaling and peeling off of the paint film.

SONOLASTIC ASPHALT PAINT

USE

For wood, metal, concrete surfaces; also for asphalt shingles.

DESCRIPTION



Typical weather - resistant SONOLASTIC Asphalt painted surface

SONOLASTIC Asphalt Paint is a butuminous oil paint that combines the permanence of high-quality gilsonite asphalt with the weather resistance of skillfully treated drying oils. Forms a tough, elastic coating which readily expands and contracts with metal surfaces as temperature changes affect them. Used as directed, SONOLASTIC will not sag or crawl in hot weather or crack in cold. Free of coal tar.

COLORS

Black, Red and Green.

ADVANTAGES

- Highly resistant to acids, alkalies, gases, moisture, smoke, chemical fumes, salt sea air and the actinic rays of the sun.
- Ready to use—requires no heating.
- Flows freely—spreads easily.
- Exceptional hiding power.
- Dries to a smooth, glossy finish in about 15 hours.
- Durable—serviceable—economical.
- Can be applied over all roofing except coal tar.

APPLICATION

1—Metal

Surface to be painted must be dry, clean and free of grease, loose paint particles or rust scales. Wire-brush surface, if necessary. Paint as follows:

First Coat: S.R.P. 75, Sonneborn's rust-inhibitive primer. Allow to dry 72 hours.

Second Coat: SONOLASTIC Asphalt Paint, as furnished. If third or fourth coat is desired, allow at least 48 hours for drying between coats.

2—Masonry

Surface to be painted must be thoroughly dry and free of loose particles or previous coatings. Paint as follows:

First Coat: SONOLASTIC Asphalt Paint, thinning each gallon with one pint of benzine or mineral spirits. Allow to dry about 5 hours.

Second Coat: SONOLASTIC Asphalt Paint, as furnished. If third coat is desired, allow at least 48 hours for drying between coats.

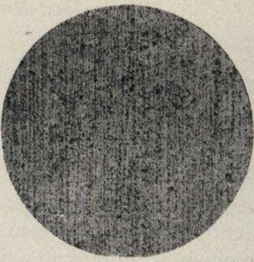
3—Wood

Surface to be painted must be bone-dry and clean. Shellac all knots and resinous parts. Paint as follows:

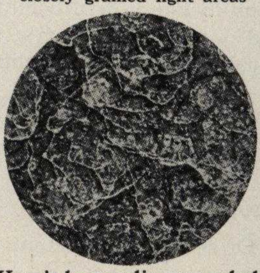
First Coat: SONOLASTIC Asphalt Paint diluted 50% with pure boiled linseed oil. Allow to dry 48 hours.

Second Coat: SONOLASTIC Asphalt Paint, as furnished.

SONOLASTIC vs. Ordinary Asphalt Paints



Here's how SONOLASTIC Asphalt Paint film looks after 250 hours of exposure to atmospheric moisture and ultra-violet light. Note uniform, smooth, closely grained light areas



Here's how ordinary asphalt paint film looks after same sort of treatment. Note "alligatored" and cracked spots as indicated by texture of film

4—New or Unpainted Roofs

Surface must be free of coal tar or graphite paint. SONOLASTIC Asphalt Paint is applied in one or two coats, depending on porosity of surface. On wood shingle roofs, dilute first coat of SONOLASTIC Asphalt Paint with one quart of boiled linseed oil per gallon. Allow to dry 48 hours. Second coat should be applied in consistency as furnished.

5—Painted Roofs

Where previous paint coatings are in good condition and are not of coal tar or graphite origin, one full-bodied coat of SONOLASTIC Asphalt Paint is sufficient to provide adequate protection.

NOTE: *SONOLASTIC Asphalt Paint is not recommended for use on surfaces subject to frequent handling.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

Metal: 400 sq. ft. per gal., one coat.

Wood and Concrete: 300 to 350 sq. ft., per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

ARMOLAC

Chemical-Resistant Coating

USE

For interior metal, wood, concrete and masonry surfaces.

DESCRIPTION

ARMOLAC is a superior asphalt protective coating which is literally tailor-made to protect surfaces against damage by commercial acids. It provides a glossy coating of excellent adhesion and continuity. It retains its elasticity for longer periods without cracking or checking. It is highly resistant to common industrial chemical solutions including hydrochloric, sulphuric and nitric acid, and organic acids such as lactic, citric and tannic. It is equally resistant to alkalies, salts, gases and vapors.

COLOR

Black.

ADVANTAGES

- Dries to a smooth, uniform film overnight.
- Flows easily—spreads smoothly.
- Exceptional hiding power.
- Easy to maintain.

APPLICATION

Surface must be clean, free of oil or grease and thoroughly dry. Wire-brush if necessary to remove rust or loose particles. ARMOLAC is applied with brush or spray.

1—Concrete, Masonry and Wood Surfaces

Two coats of ARMOLAC are required. Allow 24 hours to elapse between coats and apply second coat with minimum of brushing so as not to lift first coat. Allow second coat to dry hard (24-48 hours depending on atmospheric conditions) before putting treated surface into service.

If conditions are very severe, a third coat may be necessary, applied same as second coat. Coating should be continuous and free of pinholes. If dull spots appear (indicative of pinholes), touch up these areas.

2—New or Unpainted Metal Surfaces

First Coat—Apply S.R.P. 75, Sonneborn's rust-inhibitive primer, and allow to dry 72 hours.

Second coat—Apply ARMOLAC as described under 1. If third coat is necessary, apply same as second coat.

3—Painted Metal Surfaces

First Coat—Paint rusted areas with S.R.P. 75 and allow to dry 72 hours.

Second Coat—Apply ARMOLAC as described under 1.

4—New or Unpainted Galvanized Iron Surfaces

Surface must be degreased and washed down with a copper sulfate solution (½-1 lb. of copper sulfate per gallon of water plus ½ oz. commercial muriatic acid). Prepare solution in an earthenware container. When surface blackens, rinse with water and allow to dry. Follow directions in 2.

5—Painted Galvanized Iron Surfaces

Follow directions in 3.

6—Floors

Two coats of ARMOLAC are required. Apply as described under 1. Treated surfaces should be protected from traffic by a wooden lattice or duckboard inasmuch as ARMOLAC is not designed to withstand exposure to foot or other traffic.

HANDLING

ARMOLAC should be kept in a closed container to avoid evaporation. In cold weather keep in a warm room until ready to use. When using ARMOLAC, wear gloves and goggles and protect exposed skin surfaces. Proper ventilation is important to hasten drying and to avoid possible injury through inhalation of vapors.

THINNING

ARMOLAC may be thinned by the addition of up to one pint per gallon of V. M. & P. Naphtha or mineral spirits.

STIR WELL BEFORE USING

CAUTION: Inflammable Mixture:

Do not use near Fire or Flame. C. of A. No. 1532

COVERAGE

Metal: 250 to 300 sq. ft. per gal., first coat. 300 to 350 sq. ft. per gal., second coat.

Concrete and Wood: 125 to 175 sq. ft. per gal., two coats.

CONTAINER SIZES

Drums, 5 gals., 1 gal.

HYDROCIDE 500

Chemical-Resistant Coating

USE

For interior metal and concrete surfaces, including equipment and piping, aeration tanks, digesters, manhole frames, covers, ladders, etc., in sewage and chemical plants.

DESCRIPTION

HYDROCIDE 500 is a heavy-duty, chemical-resistant coating especially developed to protect metal and concrete surfaces subject to gases, acids, alkalies and other highly destructive influences. Possesses exceptional adhesive, elastic and protective qualities. Gives a uniformly tough, glossy finish which is durable and long-wearing.

COLOR

Black.

ADVANTAGES

- Highly resistant to the chemical action of acids, alkalies, gases, brine drippings.
- Ready to use—requires no heating.
- May be satisfactorily applied over coal tar or asphalt that is firmly bonded to the surface.
- Dries to touch in about 12 hours.

APPLICATION

1—Concrete Surfaces

No special primer is required. Surface must be clean and dry. Apply 2 coats of HYDROCIDE 500, allowing first coat to dry thoroughly before applying second coat. Apply second coat with a minimum of brushing so as not to lift the first coat. After using two coats, surface should be uniformly glossy. If dull spots appear, retouch such spots. If applied properly, the finish should show no pinholes or voids. If conditions are severe, a third coat of HYDROCIDE 500 may be necessary, applied in the same manner as second coat. Allow final coat to become thoroughly dry and hard before putting treated surface into service.

2—Plain Metal Surfaces

a. New or Unpainted Surfaces

Surface must be clean, dry and free of loosely adherent matter. Apply a prime coat of Sonneborn's S.R.P. 75, allowing this coat to dry and harden about 72 hours or longer before applying finish coat of HYDROCIDE 500. If a third coat is necessary, apply same as second coat.

b. Old Painted Surfaces

Prime all rusted areas with S.R.P. 75 and allow to dry 72 hours. Apply HYDROCIDE 500 as described under 2-a.

3—Galvanized Iron Surfaces

a. New or Unpainted Surfaces

New surfaces must be degreased and washed down with a copper sulfate solution (½ to 1 lb. of copper sulfate plus 1 to 2 ounces commercial muriatic acid per gallon of water). Prepare solution in an earthenware container. When surface blackens, rinse with water and allow to dry. Paint surface as described under 2-a.

b. Old Painted Surfaces

Paint as described under 2-b.

NOTE: *HYDROCIDE 500 may be satisfactorily applied to surfaces previously painted with coal tar or asphalt that is firmly bonded to the surface. All surfaces must be thoroughly clean and dry before painting.*

CAUTION: When using HYDROCIDE 500 in tanks and other confined places, proper ventilation is important to hasten drying and to avoid annoyance or possible injury through inhalation of vapors. Workmen should wear gloves.

Goggles should be worn when spraying HYDROCIDE 500, and exposed skin surfaces should be protected by the application of petrolatum.

Store in tightly closed drums to avoid evaporation. In cold weather, keep drums in a warm room. Do not apply at temperatures below 50° F.

If HYDROCIDE 500 thickens, it may be reduced to normal consistency by adding about 10% Xylol or Solvent Naphtha and stirring thoroughly.

KEEP AWAY FROM OPEN FLAME

STIR WELL BEFORE USING

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

Metal: 400 sq. ft. per gal., one coat. 200 to 250 sq. ft. per gal., two coats.

Concrete: 100 to 150 sq. ft. per gal., two coats.

CONTAINER SIZES

Drums, 5 gals., 1 gal.

Sonneborn Suggests...

Paint at 50° F. or Higher

Best painting results are achieved when painting is done at temperatures above 50°F. Lower temperatures interfere with the proper evaporation of the solvents, retarding the drying of the paint film.

SONNEBORN'S HEAT-RESISTING BLACK PAINT

USE

For metal surfaces subject to heat up to 500° F.

DESCRIPTION

SONNEBORN'S Heat-Resisting Black Paint is a serviceable, glossy black, heat-resistant coating specifically developed for application to stacks, boiler fronts and similar metal surfaces where temperatures do not exceed 500° F. When used as directed, it covers metal surfaces with a tough, elastic film, and tends to fill in pitted areas and seams, keeping out moisture and corrosive gases. Affords protection against sulphuric fumes and common alkalies. Guards against the lighter forms of abrasion caused by wind-blown dust and sand.

COLOR

Black.

ADVANTAGES

- Oxidizes slowly without powdering or chalking.
- High hiding power.
- Spreads easily.
- Durable—economical.

APPLICATION

Surface to be treated must be clean, thoroughly dry and free of oil, grease or rust scales. Wire-brush, if necessary, to remove loose particles and to break any blisters. SONNEBORN'S Heat-Resisting Black Paint may be applied with brush or spray, at temperature of 50° F. or above.

Apply one coat of SONNEBORN'S Heat-Resisting Black Paint while surface is cool. Do not apply to hot surface. One coat is usually sufficient, but in the case of badly worn surfaces, two coats may be required. In such cases, apply second coat after first has been permitted to dry for about 24 to 48 hours.

THINNING

SONNEBORN'S Heat-Resisting Black Paint may be thinned by adding ½ pint of mineral spirits per gallon of paint. *Do not add oils or varnishes.*

NOTE: *Before subjecting treated surface to heat, allow 72 hours for drying.*

STIR WELL BEFORE USING
KEEP AWAY FROM OPEN FLAME

COVERAGE

400 to 450 sq. ft. per gal., one coat. 250 to 300 sq. ft. per gal., two coats.

CONTAINER SIZES

Drums, 5 gals., 1 gal.

SONNEBORN'S ASPHALTUM PAINT

USE

For all metal surfaces, including ashcans, boilers, tanks, railings, etc.

DESCRIPTION

SONNEBORN'S: Asphaltum Paint is an economical, quick-drying gilsonite coating whose exceptional protective qualities have made it the preferred utility finish for all types of metal surfaces. Free of coal tar and tar acids, it leaves a tough, yet elastic, glossy black finish that remains uniform longer without powdering or chalking.

COLOR

Black.

ADVANTAGES

- Dries to a high gloss in about one hour.
- May be thinned up to 20% by the addition of benzine or gasoline.
- May be used as a shop coat on metal work.
- High hiding power.
- Serviceable—economical.

APPLICATION

Surface to be treated must be clean of rust, grease or oil. Wire-brush, if necessary, to remove loosely adherent matter. Apply SONNEBORN'S Asphaltum Paint with brush, spray or by dipping at temperatures not below 50° F.

THINNING

SONNEBORN'S Asphaltum Paint may be reduced up to 20% with benzine or gasoline to provide easier brushing and workability.

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

COVERAGE

200 to 300 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

HIDE-N-SEAL

USE

For priming and sealing interior surfaces—plaster, cement, wood, brick, wallboard and Celotex; also as enamel undercoat.

DESCRIPTION

HIDE-N-SEAL is specially formulated with selected pigments and processed vegetable oil and resins. Treated to give controlled penetration, HIDE-N-SEAL assures outstanding sealing action over porous surfaces with easier brushing and greater coverage. It dries tough, hard and with sufficient "tooth" and continuity to provide an excellent undercoat for subsequent finish coats. Its exceptional opacity makes it possible to eliminate one coat from a built-up paint job.

ADVANTAGES

- Dries to a smooth, uniform film overnight.
- Does not drag when brushed.
- Is not absorbed—penetrates sufficiently to give a positive seal.

APPLICATION

Surface must be clean and thoroughly dry. Stir thoroughly before using and apply with brush or spray.

Fresh concrete, brick and plaster surfaces should be washed down with a zinc sulfate solution (2 to 4 pounds of zinc sulfate per gallon of water) and allowed to dry for at least 36 hours before HIDE-N-SEAL is applied.

One coat of HIDE-N-SEAL (as furnished) is normally sufficient for maximum sealing and hiding. If thinning is required, use up to one pint of turpentine or mineral spirits per gallon of primer. The exact amount of thinner is dependent on the porosity of the surface.

In unusual instances where extremely porous surfaces are encountered, two coats of HIDE-N-SEAL may be necessary. This will be indicated by "spotty" drying of first coat due to excessive suction of surface. When this condition is encountered, allow first coat to dry 24 to 48 hours before applying second coat.

Allow HIDE-N-SEAL to dry thoroughly 24 to 48 hours before applying finish coat of paint or enamel.

NOTE: *HIDE-N-SEAL is available in white only. However, if a colored finish coat is to follow, HIDE-N-SEAL may be tinted slightly to a light shade of any desired color by adding a small amount (up to ½ pint per gallon of HIDE-N-SEAL) of pure alkali-proof colors in oil. Excessive amounts of color should be avoided inasmuch as they may adversely affect the sealing properties of HIDE-N-SEAL.*

STIR WELL BEFORE USING

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

400 to 500 sq. ft. per gal., one coat.

CONTAINER SIZES

Drums, 5 gals., 1 gal., 1 qt.

STORMTIGHT ALUMINUM ROOF COATING

USE

For weatherproofing and insulating flat and steep roof surfaces of composition felt, corrugated iron, galvanized iron, tar and gravel, concrete, wood, asphalt, slate, brick and shingle. Also ideal for protecting cinder block walls against sun and rain and for improving their appearance.

DESCRIPTION

STORMTIGHT Aluminum Roof Coating is a compound which combines the exceptional protective properties and durability of STORMTIGHT* with the extra insulative value of a brilliant aluminum paste pigment selected for its stability, leafing qualities and opacity.

ADVANTAGES

- Weatherproofs roofs. Remains flexible, elastic and water-resistant in any weather. Will not run or sag.
- Insulates buildings against summer heat. Keeps interior temperatures from 10 to 17 degrees lower in summer, tests indicate.
- Helps prevent heat loss from buildings in winter. Cuts down loss of heat due to radiation from roofs by approximately 30%.
- Prolongs life of roof. Its high heat-reflection factor (75 to 80%) serves as positive barrier against destructive ultraviolet rays of sun—keeps underlying roofing felt live and resilient.
- Enhances appearance of roof. Provides modern brilliant metallic finish.

APPLICATION

Stir STORMTIGHT Aluminum Roof Coating before using and apply with a three-knot roofer's brush or by spray.

To facilitate application in cold weather, keep STORMTIGHT Aluminum Roof Coating in a warm room until ready to use.

1—Porous Roofs (Composition Felt, Tar and Gravel):

a. Thoroughly sweep or wire-brush surface to remove all dirt, paint scale, thick accumulation of tar or loose gravel. STORMTIGHT Aluminum Roof Coating should not be applied to a new tar roof.

b. Split all "buckles" or blisters (if any), nail down the edges securely and cover with STORMTIGHT Plastic Roof Cement to 1/8" thickness.

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* Sonneborn's longer-lasting, all-weather roof coating.

c. Repair all joints, cracks, holes and breaks in seams and flashings with STORMTIGHT Plastic. Apply STORMTIGHT Plastic 1/4" thick, overlapping 1" on all sides of holes or cracks. Featheredge flush with roof surface. Holes or cracks larger than 1" in diameter should be reinforced with a piece of asphalt-saturated felt or burlap, coated with STORMTIGHT Plastic on both sides.

d. Nail down all loose flashings and coat to 1/8" thickness with STORMTIGHT Plastic, starting 6" above the nailing strip or where flashing turns into brick.

e. After above treatment, apply an undercoat of SONNEBORN'S Roof Primer, using 1/2 to 2 gallons per 100 square feet, depending on porosity, and starting 6" above all flashings. Allow 3 to 4 hours to set.

f. Cover entire area with STORMTIGHT Aluminum Roof Coating.

2—Metal Roofs

a. Clean surface thoroughly of rust, dirt or paint scales.

b. Follow directions under 1-c and 1-d. Holes or cracks larger than 1" diameter should be reinforced with a piece of burlap or asphalt-saturated felt coated with STORMTIGHT Plastic on both sides.

c. New Roofs—follow directions under 1-f.

d. Old roofs—follow directions under 1-e and 1-f.

3—Corrugated Metal Roofs

a. Follow directions 2-a and 2-b, repairing holes or cracks larger than 1/4" in diameter with burlap or asphalt-saturated felt coated on both sides with STORMTIGHT Plastic. Lay the patches so that they follow corrugations.

b. New Roofs—follow directions under 1-f.

c. Old Roofs—follow directions under 1-e and 1-f.

4—Galvanized Iron Roofs

a. New Roofs—degrease surface with benzine if necessary to remove oily film which usually coats new galvanized surfaces. If roof is less than one year old, wash with a 10% copper sulphate solution, rinse with water and allow to dry. Cover entire area with STORMTIGHT Aluminum Roof Coating as indicated under 1-f.

b. Old roofs—if roof has weathered for more than one year follow directions 2-a, 2-b, 1-e, and 1-f for old metal roofs.

5—Concrete Roofs

Follow complete directions as in 1-a to 1-f inclusive.

6—Shingle and Canvas Roofs

Each shingle and canvas roof presents its own individual problem. Specific directions available on request.

KEEP AWAY FROM OPEN FLAME

COVERAGE

(For surfaces of average porosity and regularity)

Felt and Similar Composition Roofs	1½ to 3 gals. per 100 sq. ft.
Metal Roofs	1 to 2 gals. per 100 sq. ft.
Tar and Gravel, Slag, Corrugated Iron Roofs	3 to 4 gals. per 100 sq. ft.
Concrete Roofs	2 gals per 100 sq. ft.

CONTAINER SIZES

Drums, 5 gals., 1 gal.

The STORMTIGHT Planned System of Roof Protection

Sonneborn Suggests...

Employed singly or in combination, depending on the condition and needs of the particular roof and its structural parts, the STORMTIGHT Planned System provides longer lasting roof protection in these ways:

Provides maximum roof protection with the greatest economy in maintenance over the longest possible period of usefulness by the application of STORMTIGHT, the roof coating with the extra long-life ingredient.

Seals and patches cracks, seams and worn spots on or around structural parts of the roof by the application of STORMTIGHT Plastic.

Restores the natural qualities of the original roof foundation by the application of SONNEBORN'S Roof Primer before recoating dry, flaky, porous surfaces.

STORMTIGHT

(Liquid and Plastic)

The Roof Coating With the EXTRA Long-Life Ingredient

USE

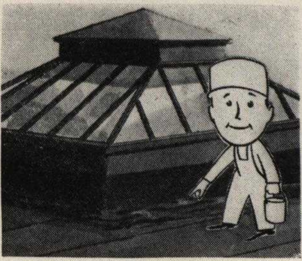
Liquid: For preserving and protecting new and old roofs of all types, including composition felt, tar and gravel, galvanized iron, tin, concrete, slag, corrugated iron, shingle and canvas.

Plastic: For sealing and patching flashings around chimneys, cornices, skylights, parapet walls, gutters and valleys.

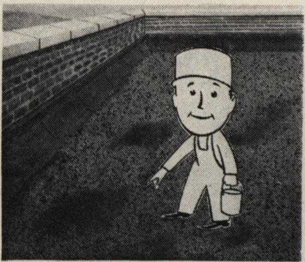
DESCRIPTION

STORMTIGHT is a quality bituminous compound containing high-grade asphalt, long fiber asbestos and solvent plus an extra long-life ingredient not duplicated in ordinary roof coatings. When applied, STORMTIGHT forms a protective, weather-resistant coating that remains unaffected by the actinic rays of the sun and withstands temperature changes and alternate wetting and drying out without blistering or cracking. It possesses a web-like continuity that helps it to resist the abrasive action of wind and dust. It remains elastic and resilient, won't sag, crawl or run.

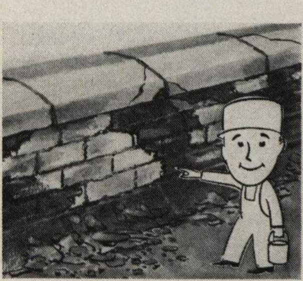
STORMTIGHT
Liquid and Plastic



For chimneys, skylights, etc.



For new and old roofs



For parapet walls, flashings, etc.

COLOR

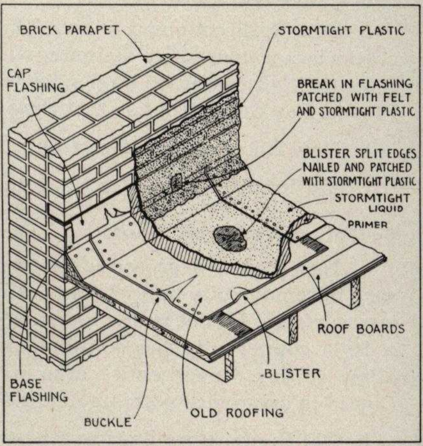
Black.

ADVANTAGES

- Waterproofs—weatherproofs—rustproofs—revitalizes.
- Provides maximum durability under all conceivable conditions of service.
- Greater resistance against chalking and powdering—gives long-range service.
- Comes ready to use—no heating or thinning required.
- Easy to apply—spreads easily to proper thickness.
- Provides overall protection for any roof in any condition.

APPLICATION

STORMTIGHT Liquid should be stirred well before using and applied with a three-knot roofing brush. STORMTIGHT Plastic should be applied with a trowel. SONNEBORN'S Roof Primer is applied with a three-knot roofing brush.


BRICK PARAPET
STORMTIGHT PLASTIC
CAP FLASHING
BREAK IN FLASHING PATCHED WITH FELT AND STORMTIGHT PLASTIC
BLISTER SPLIT EDGES NAILED AND PATCHED WITH STORMTIGHT PLASTIC
STORMTIGHT LIQUID
PRIMER
ROOF BOARDS
BLISTER
BASE FLASHING
BUCKLE
OLD ROOFING

The use of STORMTIGHT Liquid and Plastic in typical parapet and roof patching job

1—Porous Proofs, Composition Felt, Tar and Gravel

a. Thoroughly sweep or wire brush surface to remove all dirt, paint scale, thick accumulation of tar or loose gravel. STORMTIGHT should not be applied to a new tar roof.

b. Split all "buckles" or blisters (if any), nail down the edges securely and cover with STORMTIGHT Plastic to 1/8" thickness.

c. Repair all joints, cracks, holes and breaks in seams and flashings with STORMTIGHT Plastic. Apply STORMTIGHT Plastic 1/4" thick, overlapping 1" on all sides of holes or cracks. Featheredge flush with roof surface. Holes or cracks larger than 1" in diameter should be reinforced with a piece of asphalt-saturated felt or burlap, coated with STORMTIGHT Plastic on both sides.

d. Nail down all loose flashings and coat to 1/8" thickness with STORMTIGHT Plastic, starting 6" above the nailing strip or where flashing turns into brick.

e. After above treatment, apply an undercoat of SONNEBORN'S Roof Primer, using 1½ to 2 gallons per 100 square feet, depending on porosity, and starting 6" above all flashings. Allow three to four hours to set.

f. Cover entire area with STORMTIGHT Liquid, using 1 to 4 gallons per 100 square feet, depending on porosity.

2—Metal Roofs

a. Clean surface thoroughly of rust, dirt or paint scales.

b. Follow directions under 1-c and 1-d. Holes or cracks larger than 1" diameter should be reinforced with a piece of burlap or asphalt-saturated felt coated with STORMTIGHT Plastic on both sides.

c. New roofs—follow direction under 1-f.

d. Old roofs—follow directions under 1-e and 1-f.

3—Corrugated Metal Roofs

a. Follow directions 2-a and 2-b, repairing holes or cracks larger than ¼" in diameter with burlap or asphalt-saturated felt coated on both sides with STORMTIGHT Plastic. Lay the patches so that they follow corrugations.

b. New Roofs—follow directions under 1-f.

c. Old Roofs—follow directions under 1-e and 1-f.

4—Galvanized Iron Roofs

a. New Roofs—degrease surface with benzine, if necessary to remove oily film which usually coats new galvanized surfaces. If roof is less than one year old, wash with a 10% copper sulphate solution, rinse with water and allow to dry. Cover entire area with STORMTIGHT Liquid in acordance with amount indicated under 1-f.

b. Old Roofs—if roof has weathered for more than one year, follow directions 2-a, 2-b, 1-e and 1-f for old metal roofs.

5—Concrete Roofs

Follow complete directions as in 1-a to 1-f inclusive.

6—Shingle and Canvas Roofs

Each shingle and canvass roof presents its own indidividual problem. Specific directions available on request.

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE (per 100 sq. ft.)

	Liquid	*Plastic*
Felt and other Composition	1½ to 3 gals.	25 to 30 lbs.
Tin or metal	1 to 2 gals.	25 to 30 lbs.
Corrugated Iron	3 to 4 gals.	35 to 50 lbs.
Tar and Gravel	3 to 4 gals.	35 to 50 lbs.

CONTAINER SIZES

Liquid: Drums, ½ drums, 5 gals., 1 gal.

Plastic: Drums (550 lb., 375 lb., 50 lb.,); cans (10 lb. and 2½ lb.).

SONNEBORN'S ROOF PRIMER

USE

For priming new roofs; revitalizing old, porous and flaky roofs of all kinds.

DESCRIPTION

SONNEBORN'S Roof Primer is a rich bituminous compound of easy-brushing consistency especially designed to restore the natural qualities of old and weathered roof foundations as well as for sealing new porous roof surfaces, prior to the application of a liquid or plastic roof coating.

ADVANTAGES

- Ready to use—requires no heating or thinning.
- Adheres to vertical surfaces without running.
- High adhesive qualities.
- Economical—serviceable.

APPLICATION

SONNEBORN'S Roof Primer is ready for use—needs no heating or thinning. It is applied with a three-knot roofing brush. Surface to be treated must be clean and dry.

Before applying SONNEBORN'S Roof Primer, make sure that all "buckles" or blisters are nailed down securely and coated with STORMTIGHT Plastic. All joints, cracks, holes and breaks in seams and flashings must be likewise treated.

After worn areas have been reconditioned, apply one coat of SONNEBORN'S Roof Primer, starting 6″ above all flashings. Allow 3 to 4 hours to set. Then apply a liberal quantity of STORMTIGHT Liquid in accordance with directions for the application of STORMTIGHT.

KEEP AWAY FROM OPEN FLAME

CAUTION: Combustible Mixture; C. of A. No. 1529

COVERAGE

1 to 2 gals. per 100 sq. ft.
(Depending on porosity of surface.)

CONTAINER SIZES

Drums, ½ drums, 5 gals., 1 gal.

SONNEBORN'S "BUILDING SAVERS" ESTIMATING GUIDE

Concrete Floor Treatments

USE	PRODUCT	QUANTITY REQUIRED	HOW USED
Chemical Hardening, Dustproofing, Protection Against Oils, Salts, Alkalies, etc.	LAPIDOLITH (Patented)	Uncolored Concrete Floor: 1 gal. per 100 sq. ft., 3 Applications Colored Concrete Floors: 1 gal. per 150 sq. ft., 3 Applications Terrazzo Floors: 1 gal. per 150 sq. ft., 3 Applications	Dilute with water and apply with long-handled brush. Three applications required. See page 9
Metallic Hardening and Coloring	FERROLITH H	LIGHT TRAFFIC 30 lbs. per 100 sq. ft. MEDIUM TRAFFIC 40 lbs. per 100 sq. ft. HEAVY TRAFFIC 50 lbs. per 100 sq. ft.	Mix with cement and apply dry at troweling or finishing. See page 21
Patching	SONOMEND	Surface ½" Thick / PRIMER / SONOMEND 50 sq. ft. / 8 lbs. / 42 lbs. 100 sq. ft. / 16 lbs. / 80 lbs. 200 sq. ft. / 32 lbs. / 160 lbs. 300 sq. ft. / 48 lbs. / 240 lbs. 500 sq. ft. / 80 lbs. / 400 lbs.	Primer used directly from container. SONOMEND mixed with Portland cement, sand and water. Apply with trowel. See page 18
Decorating and Protecting	CEMCOAT F & D (Colors and Transparent)	1 gal. per 500 sq. ft., one coat. 1 gal. per 275 sq. ft., two coats.	Brush or spray. See page 15
Integral Coloring	SONOBRITE MINERAL COLORS	2 to 5 lbs. per bag of cement, depending on color.	Mix dry with mortar or concrete mix prior to introduction of gauging water. See page 26
Curing	HYDROCIDE CURING COMPOUND	1 gal. per 250 sq. ft., one coat.	Brush or spray. See page 24

Wood Floor Treatments

USE	PRODUCT	QUANTITY REQUIRED	HOW USED
Preserving Prefabricated and other Interior and Exterior Wood Surfaces; Preserving and Finishing Heavy Service Floors	LIGNOPHOL PENETRATING FINISH	SOFT WOODS: 1 gal. per 600 sq. ft., one coat. HARD WOODS: 1 gal. per 700 sq. ft., one coat.	Immerse or apply by brush. See page 28

Preserving and Finishing Industrial, Commercial and other types of Wood Floors	LIGNOPHOL QUICK-DRYING FINISH	SOFT WOODS: 1 gal. per 600 sq. ft., one coat. HARD WOODS: 1 gal. per 700 sq. ft., one coat.	Apply with lamb's wool applicator, soft cloth or squeegee. See page 33
Protecting and Beautifying Wood Paneling and Trim	LIGNOPHOL WAX FINISH	SOFT WOODS: 1 gal. per 600 sq. ft., one coat. HARD WOODS: 1 gal. per 700 sq. ft., one coat.	Apply with lamb's wool applicator or brush (soft cloth for trim). See page 31
Cleaning and Waxing Wood Floors and Linoleum	FLOORLIFE CLEANER	1 gal. per 800-1000 sq. ft.	Apply with cloth, mop or electric polishing machine. See page 36
Waxing and Polishing Wood Floors, Woodwork and Linoleum	SONOSHEEN LIQUID AND PASTE WAXES (Buffing Type)	LIQUID: 1 gal. per 2500-3000 sq. ft. (linoleum and wood) PASTE: 1 lb. per 300 sq. ft. (linoleum and wood). LIQUID: 1 gal. per 350-400 sq. ft. (on concrete). PASTE: 1 lb. per 50-75 sq. ft. (on concrete).	LIQUID: Mop or spray. PASTE: Place between two or three layers of cheese cloth. See page 38
Waxing (Rubber Tile, Asphalt Tile, Other Composition Flooring)	SONOSHEEN SELF-POLISHING WAX	1 gal. per 1500-2000 sq. ft., first coat. 1 gal. per 2000-3000 sq. ft., second coat.	Apply with cloth, mop, or spray. See page 40
Decorating and Protecting	CEMCOAT F & D	See CONCRETE FLOOR TREATMENTS	See page 15
Patching	SONOMEND	See CONCRETE FLOOR TREATMENTS	See page 18

Roof Coatings

Weatherproofing, Rustproofing, Preserving and Revitalizing New and Old Roofs	STORMTIGHT LIQUID	1 to 4 gals. per 100 sq. ft., (depending on porosity of surface).	Apply with three-knot roofing brush. See page 94
Sealing, Patching New and Old Roofs and Structural Parts	STORMTIGHT PLASTIC ROOF CEMENT	25 to 50 lbs. per 100 sq. ft. (depending on porosity of surface).	Apply with trowel. See page 94
Priming Old Roofs	SONNEBORN'S ROOF PRIMER	1½ to 2 gals. per 100 sq. ft. (depending on porosity of surface).	Apply with three-knot roofing brush. See page 97

(continued on page following)

SONNEBORN'S "BUILDING SAVERS" ESTIMATING GUIDE (Continued)

Concrete Admixtures

<table>
<tr><th>USE</th><th>PRODUCT</th><th>QUANTITY REQUIRED</th><th>HOW USED</th></tr>
<tr><td>Set Accelerant, Water Ratio Reducer, Cement Dispersant</td><td>TRIMIX</td><td>1 qt. per bag of cement.</td><td>Integrally. Add to gauging water. See page 41</td></tr>
<tr><td>Mortar Containing Lime</td><td>TRIMIX</td><td>1 qt. per bag of cement, plus 1 qt. per bag of lime if lime is used.</td><td>Integrally. Add to gauging water. See page 41</td></tr>
<tr><td>Protection against Freezing</td><td>TRIMIX</td><td>1½ qts. per bag of cement at 25°F. An additional ½ qt. with each 5°F. drop in temperature.</td><td>Integrally. Add to gauging water. See page 41</td></tr>
<tr><td>Waterproofing (Integrally) Mass Concrete, Stucco, Cement, Plaster</td><td>HYDROCIDE PASTE
HYDROCIDE POWDER</td><td>
<table>
<tr><th></th><th colspan="2"><i>100 sq. ft. 1 in. thick</i></th><th colspan="2"><i>One Cubic Yd.</i></th><th colspan="2"><i>100 Cubic Ft.</i></th></tr>
<tr><th></th><th>Paste</th><th>Bags of Cement</th><th>Paste</th><th>Bags of Cement</th><th>Paste</th><th>Bags of 2Cement</th></tr>
<tr><td>1:2:3 Concrete</td><td>2 lbs.</td><td>2</td><td>7 lbs.</td><td>7</td><td>26 lbs.</td><td>26</td></tr>
<tr><td>1:2:4 Concrete</td><td>2 lbs.</td><td>1¾</td><td>6 lbs.</td><td>6</td><td>22 lbs.</td><td>22</td></tr>
<tr><td>1:2 Floor Finish</td><td>4 lbs.</td><td>4</td><td>12 lbs.</td><td>12½</td><td>46 lbs.</td><td>46</td></tr>
<tr><td>1:3 Brick Mortar</td><td>3 lbs.</td><td>3</td><td>9 lbs.</td><td>9½</td><td>35 lbs.</td><td>35</td></tr>
<tr><td>1:2 Plaster Cast</td><td>4 lbs.</td><td>4</td><td>12 lbs.</td><td>12½</td><td>46 lbs.</td><td>46</td></tr>
<tr><td>1:3 Stucco</td><td>3 lbs.</td><td>3</td><td>9 lbs.</td><td>9½</td><td>35 lbs.</td><td>35</td></tr>
</table>
<i>(If specified in Powder form, use same quantities.)</i></td><td>PASTE: Integrally. Dilute with equal volume of gauging water. Add to wet mix.
POWDER: Disperse in dry mix before adding gauging water.
See page 43</td></tr>
</table>

Waterproofing and Dampproofing

Waterproofing Structurally Sound Exterior Concrete and Masonry Walls, Above Grade	HYDROCIDE COLORLESS ("D" for porous light colored surfaces, "G" for dense surfaces)	1 gal. per 100 sq. ft., one coat. 1 gal. per 150-200 sq. ft. second coat.	Brush or spray. See page 44
Dampproofing Interior Concrete and Masonry Walls and Floors, Above and Below Grade (Metallic Process)	FERROLITH W	40 lbs. per 100 sq. ft., three applications.	Mix with Portland cement and water, apply with brush. See page 55

PLASTERBOND AND INTERIOR DAMPPROOFING, ABOVE GRADE

Asphalt type, non-fibrated, paint consistency	HYDROCIDE 633	1 gal. per 75 sq. ft., one coat. 1 gal. per 100 sq. ft., second coat.	Apply cold with brush or spray. See page 52
Asphalt emulsion—recommended where dampness may exist in wall	HYDROCIDE 600	1 gal. per 75-100 sq. ft., one coat.	Apply cold with brush or spray. See page 50
Heavy fibrated asphalt mastic for maximum protection	HYDROCIDE MASTIC	1 gal. per 20 sq. ft., one coat.	Apply cold with trowel. See page 46
Less heavily fibrated asphalt semi-mastic	HYDROCIDE SEMI-MASTIC	1 gal. per 35 sq. ft., one coat.	Apply cold with brush. See page 48

DAMPPROOFING EXTERIOR WALLS, BELOW GRADE

Heavy fibrated asphalt mastic for maximum protection	HYDROCIDE MASTIC	1 gal. per 20 sq. ft., one coat.	Apply cold with trowel. See page 46
Less heavily fibrated asphalt semi-mastic	HYDROCIDE SEMI-MASTIC	1 gal. per 35 sq. ft., one coat.	Apply cold with brush. See page 48
Asphalt type, non-fibrated, paint consistency	HYDROCIDE 648 (also for Stonebacking)	1 gal. per 75 sq. ft., first coat. 1 gal. per 125 sq. ft., second coat. { Stonebacking: 1 gal. per 125-175 sq. ft., one coat }	Apply cold with brush or spray. See page 53
Asphalt emulsion, non-fibrated	HYDROCIDE 600	1 gal. per 75-100 sq. ft., one coat.	Apply cold with brush or spray. See page 50
Asphalt emulsion, heavily fibrated	HYDROCIDE 700	1 gal. per 15-20 sq. ft., one coat.	Apply cold with trowel. See page 54
Caulking, Sealing, Pointing, Glazing, etc.	KAUKIT (Knife and Gun Grades)	GUN GRADE: 1 gal. per 150 ft. KNIFE GRADE: 1 lb. per 15-25 ft.	Apply with standard caulking gun or knife. See page 57

Materials Required for 100 Sq. Ft. of Surface for Varying Thicknesses of Concrete or Mortar

Quantities may vary 10% either way, depending upon character of aggregate used. No allowance made for waste.

Thickness of mortar or concrete (in.)	Amount of mortar or concrete (cu. yd.)	PROPORTIONS								
		1 : 2			1 : 3			1 : 1 : 1¾		
		Cement (sacks)	Fine Aggregate (cu. ft.)	Coarse Aggregate (cu. ft.)	Cement (sacks)	Fine Aggregate (cu. ft.)	Coarse Aggregate (cu. ft.)	Cement (sacks)	Fine Aggregate (cu. ft.)	Coarse Aggregate (cu. ft.)
⅜	0.115	1.4	2.8	....	1.0	3.0	....	....	....	....
½	0.15	1.8	3.6	....	1.3	4.0	....	....	....	....
¾	0.23	2.7	5.4	....	2.0	6.0	....	2.3	2.3	3.9
1	0.31	3.7	7.4	....	2.7	8.1	....	3.1	3.1	5.3
1¼	0.38	4.5	9.0	....	3.3	10.0	....	3.8	3.8	6.5
1½	0.46	5.4	10.8	....	4.0	12.0	....	4.6	4.6	7.8
1¾	0.54	6.4	12.8	....	4.7	14.1	....	5.4	5.4	9.2
2	0.62	7.3	14.6	....	5.4	16.2	....	6.2	6.2	10.5
		1 : 1¾ : 2			1 : 2¼ : 3			1 : 2¾ : 4		
3	0.92	7.5	12.9	14.7	5.8	12.9	17.5	4.6	12.9	18.4
4	1.24	10.0	17.3	19.9	7.8	17.3	23.6	6.2	17.3	24.8
5	1.56	....	....	....	9.8	21.7	29.6	7.8	21.8	31.2
6	1.85	....	....	....	11.5	26.0	35.2	9.3	26.0	37.0
8	2.46	....	....	....	15.4	34.4	46.8	12.3	34.4	49.3
10	3.08	....	....	....	19.3	43.2	58.5	15.4	43.2	61.6
12	3.70	....	....	....	23.1	51.8	70.4	18.5	51.8	74.0

Courtesy of Portland Cement Association.

Net Water-Cement Ratios for Various Types of Construction and Exposure Conditions *

TYPE OR LOCATION OF STRUCTURE		Severe or moderate climate, wide range of temperature, rain, and long freezing spells or frequent freezing and thawing					Mild climate, rain or semi-arid; rarely snow or frost				
		Thin sections, gal. per sack		Moderate sections, gal. per sack		Heavy and mass sections, gal. per sack	Thin sections, gal. per sack		Moderate sections, gal. per sack		Heavy and mass sections, gal. per sack
		Reinf.	Plain	Reinf.	Plain		Reinf.	Plain	Reinf.	Plain	
A. At the water line in hydraulic or waterfront structures or portions of such structures where complete saturation or intermittent saturation is possible, but not where the structure is continuously submerged:	In fresh water	5	5½	5½	6	6	5	5½	5½	6	6
	In sea water	5½	6	6	6½	6½	5½	6	6	6½	6½
B. Portions of hydraulic or waterfront structures some distance from the water line, but subject to frequent wetting:	By sea water	5½	6	6	6	6	5½	6½	6½	7	7
	By fresh water	6	6½	6½	6½	6½	6	7	7	7½	7½
C. Ordinary exposed structures, buildings and portions of bridges not coming under above groups.		6	6½	6½	7	7	6	7	7	7½	7½
D. Complete continuous submergence:	In sea water	6	6½	6½	7	7	6	6½	6½	7	7
	In fresh water	6½	7	7	7½	7½	6½	7	7	7½	7½
E. Concrete deposited through water.		**	**	5½	5½	5½	**	**	5½	5½	5½
F. Pavement slabs directly on ground:	Wearing slabs	5½	6	**	**	**	6	6½	**	**	**
	Base slabs	6½	7	**	**	**	7	7½	**	**	**

G. Special case: For concrete not exposed to the weather, such as interiors of buildings and portions of structures entirely below ground, no exposure hazard is involved and the water-cement ratio should be selected on the basis of the strength and workability requirements.

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*Adapted from Table 1 of the 1940 Joint Committee "Report on Recommended Practice and Standard Specifications for Concrete and Reinforced Concrete".

**These sections not practicable for the purpose indicated.

Courtesy of Portland Cement Association.

How to Determine Number of Bricks Required

Number of Common Bricks (2¼"x3¾"x8") Required for Walls of Different Thicknesses.

SURFACE AREA OF WALL (Square Feet)	NUMBER OF BRICKS NEEDED FOR THICKNESS OF:					
	4 inches	8 inches	12 Inches	16 Inches	20 Inches	24 Inches
10	75	150	225	300	375	450
20	150	300	450	600	750	900
30	225	450	675	900	1,125	1,350
40	300	600	900	1,200	1,500	1,800
50	375	750	1,125	1,500	1,875	2,250
60	450	900	1,350	1,800	2,250	2,700
70	525	1,050	1,575	2,100	2,625	3,150
80	600	1,200	1,800	2,400	3,000	3,600
90	675	1,350	2,025	2,700	3,375	4,050
100	750	1,500	2,250	3,000	3,750	4,500
200	1,500	3,000	4,500	6,000	7,500	9,000
300	2,250	4,500	6,750	9,000	11,250	13,500
400	3,000	6,000	9,000	12,000	15,000	18,000
500	3,750	7,500	11,250	15,000	18,750	22,500
600	4,500	9,000	13,500	18,000	22,500	27,000
700	5,250	10,500	15,750	21,000	26,250	31,500
800	6,000	12,000	18,000	24,000	30,000	36,000
900	6,750	13,500	20,250	27,000	33,750	40,500
1,000	7,500	15,000	22,500	30,000	37,500	45,000

Courtesy of Portland Cement Association.

Recommended Proportions of Water To Cement and Suggested Trial Mixes

KINDS OF WORK	Add U. S. gal. of water to each sack batch if sand is			Suggested mixture for trial batch			Materials per cu. yd. of concrete*		
	Very wet	Wet (average sand)	Damp	Cement, sacks	Aggregates		Cement, sacks	Aggregates	
					Fine, cu. ft.	Coarse cu. ft.		Fine, cu. ft.	Coarse cu. ft.
5-Gal. Paste for Concrete Subjected to Severe Wear, Weather or Weak Acid and Alkali Solutions									
							Maximum size aggregate ¾ in.		
One-course industrial, creamery and dairy plant floors, etc.	3¾	4	4½	1	1¾	2	8	14	16
6-Gal. Paste for Concrete to be Watertight or Subjected to Moderate Wear and Weather									
							Maximum size aggregate 1½ in.		
Watertight floors, such as industrial plant, basement, dairy barn; watertight foundations; driveways, walks, tennis courts, swimming and wading pools, septic tanks, storage tanks, structural beams, columns, slabs, residence floors, etc.	4¼	5	5½	1	2¼	3	6¼	14	19
7-Gal. Paste for Concrete not Subjected to Wear, Weather or Water									
							Maximum size aggregate 1½ in.		
Foundation walls, footings, mass concrete. etc.	4¾	5½	6¼	1	2¾	4	5	14	20

*Quantities are estimated on wet aggregates using suggested trial mixes and medium consistencies—quantities will vary according to the grading of aggregate and the workability desired.

Courtesy of Portland Cement Association.

It may be necessary to use a richer paste than is shown in the table because the concrete may be subjected to more severe conditions than are usual or a structure of the type being constructed. For example, a swimming pool ordinarily is made with a 6-gal. paste. However, the pool may be built in a place where soil water is strongly alkaline, in which case a 5-gal. paste is required.

Covering Capacity of Mortar and Stucco

Area covered by one barrel of cement in various mixes

MIX Parts by Volume		THICKNESS OF COAT				
		¼ Inch	⅜ Inch	½ Inch	¾ Inch	1 Inch
Cement	**Sand**	**Sq. Ft.**	**Sq. Ft.**	**Sq. Ft.**	**Sq. Ft.**	**Sq. Ft.**
1	1	266	177	133	89	66
1	1½	336	226	168	112	84
1	2	404	270	202	135	101
1	2½	472	314	236	157	118
1	3	542	362	271	181	136
1	3½	612	408	306	204	153
1	4	682	455	341	227	171

Courtesy of Universal Atlas Cement Company.

Quantities of Cement and Sand Needed for One Cubic Yard of Mortar

PROPORTIONS BY PARTS		Barrels of Cement	Cubic Yards of Sand
Cement	Sand		
1	1	4.7	0.7
1	1½	3.7	0.8
1	2	3.0	0.9
1	2½	2.6	0.95
1	3	2.25	1.0
1	4	1.80	1.07

Courtesy of Universal Atlas Cement Company.

Square Feet in the Ceilings and Four Walls of Rooms (8′ Ceilings)

Feet Long	Feet Wide										
	3	4	5	6	7	8	9	10	11	12	13
	Area Square Feet										
3	105	124	143	162	181	200	219	238	257	276	295
6	162	184	206	228	250	272	294	316	338	360	382
9	219	244	269	294	319	344	369	394	419	444	469
12	276	304	332	360	388	416	444	472	500	528	556
15	333	364	395	426	457	488	519	550	581	612	643
18	390	424	458	492	526	560	594	628	662	696	730
21	447	484	521	558	595	632	669	706	743	780	817
24	504	544	584	624	664	704	744	784	824	864	904

Feet Long	Feet Wide										
	14	15	16	17	18	19	20	21	22	23	24
	Area Square Feet										
3	314	333	352	371	390	409	428	447	466	485	504
6	404	426	448	470	492	514	536	558	580	602	624
9	494	519	544	569	594	619	644	669	694	719	744
12	584	612	640	668	696	724	752	780	808	836	864
15	674	705	736	767	798	829	860	891	922	953	984
18	764	798	832	866	900	934	968	1002	1036	1070	1104
21	854	891	928	965	1002	1039	1076	1113	1150	1187	1224
24	944	984	1024	1064	1104	1144	1184	1224	1264	1304	1344

Table of Board Feet for Various Sizes and Lengths of Lumber For Use in Estimating Forms and Other Timber Work*

Size of Timber in Inches	LENGTH OF PIECE IN FEET							
	10	12	14	16	18	20	22	24
1 x 2	1⅔	2	2⅓	2⅔	3	3⅓	3⅔	4
1 x 3	2½	3	3½	4	4½	5	5½	6
1 x 4	3⅓	4	4⅔	5⅓	6	6⅔	7⅓	8
1 x 5	4⅙	5	5⅚	6⅔	7½	8⅓	9⅙	10
1 x 6	5	6	7	8	9	10	11	12
1 x 8	6⅔	8	9⅓	10⅔	12	13⅓	14⅔	16
1 x 10	8⅓	10	11⅔	13⅓	15	16⅔	18⅓	20
1 x 12	10	12	14	16	18	20	22	24
1 x 14	11⅔	14	16⅓	18⅔	21	23⅓	25⅔	28
1 x 16	13⅓	16	18⅔	21⅓	24	26⅔	29⅓	32
1 x 20	16⅔	20	23⅓	26⅔	30	33⅓	36⅔	40
1¼ x 4	4⅙	5	5⅚	6⅔	7½	8⅓	9⅙	10
1¼ x 6	6¼	7½	8¾	10	11¼	12½	13¾	15
1¼ x 8	8⅓	10	11⅔	13⅓	15	16⅔	18⅓	20
1¼ x 10	10⅓	12½	14½	16⅔	18⅔	20⅚	22⅚	25
1¼ x 12	12½	15	17½	20	22½	25	27½	30
1½ x 4	5	6	7	8	9	10	11	12
1½ x 6	7½	9	10½	12	13½	15	16½	18
1½ x 8	10	12	14	16	18	20	22	24
1½ x 10	12½	15	17½	20	22½	25	27½	30
1½ x 12	15	18	21	24	27	30	33	36
2 x 4	6⅔	8	9⅓	10⅔	12	13⅓	14⅔	16
2 x 6	10	12	14	16	18	20	22	24
2 x 8	13⅓	16	18⅔	21⅓	24	26⅔	29⅓	32
2 x 10	16⅔	20	23⅓	26⅔	30	33⅓	36⅔	40
2 x 12	20	24	28	32	36	40	44	48
2 x 14	23⅓	28	32⅔	37⅓	42	46⅔	51⅓	56
2 x 16	26⅔	32	37½	42⅔	48	53⅓	58⅔	64
2½ x 12	25	30	35	40	45	50	55	60
2½ x 14	29⅙	35	40⅚	46⅔	52½	58⅓	64⅙	70
2½ x 16	33⅓	40	46⅔	53⅓	60	66⅔	73⅓	80
3 x 6	15	18	21	24	27	30	33	36
3 x 8	20	24	28	32	36	40	44	48
3 x 10	25	30	35	40	45	50	55	60
3 x 12	30	36	42	48	54	60	66	72
3 x 14	35	42	49	56	63	70	77	84
3 x 16	40	48	56	64	72	80	88	96
4 x 4	13⅓	16	18⅔	21⅓	24	26⅔	29⅓	32
4 x 6	20	24	28	32	36	40	44	48
4 x 8	26⅔	32	37⅓	42⅔	48	53⅓	58⅔	64
4 x 10	33⅓	40	46⅔	53⅓	60	66⅔	73⅓	80
4 x 12	40	48	56	64	72	80	88	96
4 x 14	46⅔	56	65⅓	74⅔	84	93⅓	102⅔	112
6 x 6	30	36	42	48	54	60	66	72
6 x 8	40	48	56	64	72	80	88	96
6 x 10	50	60	70	80	90	100	110	120
6 x 12	60	72	84	96	108	120	132	144
6 x 14	70	84	98	112	126	140	154	168
6 x 16	80	96	112	128	144	160	176	192
8 x 8	53⅓	64	74⅔	85⅓	96	106⅔	117⅓	128
8 x 10	66⅔	80	93⅓	106⅔	120	133⅓	146⅔	160
8 x 12	80	96	112	128	144	160	176	192

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*Figures given are Board Feet. Lumber is usually priced by the Thousand Board Feet. A piece 1 inch thick, 12 inches wide and 1 foot long, constitutes 1 foot Board Measure.

Courtesy of Universal Atlas Cement Company

WEIGHTS and MEASURES

TROY WEIGHT

20 grains	1 scruple
20 pennyweights	1 ounce
12 ounces	1 pound

Use for weighing gold, silver and jewels

APOTHECARIES WEIGHT

24 grains	1 scruple
3 scruples	1 dram
8 drams	1 ounce
12 ounces	1 pound

The ounce and pound in this are the same as in Troy Weight.

AVOIRDUPOIS WEIGHT

$27\frac{11}{32}$ grains	1 dram
16 drams	1 ounce
16 ounces	1 pound
25 pounds	1 quarter
4 quarters	1 cwt.
2,000 lbs.	1 short ton
2,240 lbs.	1 long ton

DRY MEASURE

2 pints	1 quart
8 quarts	1 peck
4 pecks	1 bushel
36 bushels	1 chaldron

LIQUID MEASURE

4 gills	1 pint
2 pints	1 quart
4 quarts	1 gallon
31½ gallons	1 barrel
2 barrels	1 hogshead

LINEAR MEASURE

12 inches	1 foot
3 feet	1 yard
5½ yards	1 rod
40 rods	1 furlong
8 furlongs	1 standard mile
3 miles	1 league

SQUARE MEASURE

144 sq. inches	1 sq. ft.
9 sq. ft.	1 sq. yard
30¼ sq. yds.	1 sq. rod
40 sq. rods	1 rood
4 roods	1 acre
640 acres	1 sq. mile

CLOTH MEASURE

2¼ inches	1 nail
4 nails	1 quarter
4 quarters	1 yard

SURVEYOR'S MEASURE

7.92 inches	1 link
25 links	1 rod
4 rods	1 chain
10 sq. chains or 160 sq. rods	1 acre
640 acres	1 square mile
36 sq. miles or 6 miles sq.	1 township

WEIGHTS and MEASURES

(Continued)

CUBIC MEASURE

1728 cubic inches	1 cubic foot
128 cubic feet	1 cord wood
27 cubic feet	1 cubic yard
40 cubic feet	1 ton shpg.
2150.42 cu. in.	1 standard bushel
268.8 cu. in.	1 standard gallon dry
231 cu. in.	1 standard gallon liquid
1 cubic foot	about 4/5 of a bushel

1 Perch. . A mass 16½ ft. long, 1 ft. high and 1½ ft. wide, containing 24¾ cu. ft.

METRIC EQUIVALENTS—LINEAR MEASURE

1 centimeter	0.3937 in.
1 decimeter	3.937 in. or 0.328 ft.
1 meter	39.37 in. or 1.0936 yards
1 dekameter	1.9884 rods
1 kilometer	0.62137 mile
1 inch	2.54 centimeters
1 foot	3.048 decimeters
1 yard	0.9144 meter
1 rod	0.5028 dekameter
1 mile	1.6093 kilometers

SQUARE MEASURE

1 sq. centimeter	0.1550 sq. in.
1 sq. decimeter	0.1076 sq. ft.
1 sq. meter	1.196 sq. yd.
1 acre	3.954 sq. rods
1 hectare	2.47 acres
1 sq. kilometer	0.386 sq. mile
1 sq. inch	6.452 sq. centimeters
1 sq. foot	9.2903 sq. decimeters
1 sq. yard	0.8361 sq. meter
1 sq. rod	0.259 are
1 acre	0.4047 hectare
1 sq. mile	2.59 sq. kilometers

WEIGHTS

1 gram	0.03527 ounce
1 kilogram	2.204622 lbs.
1 metric ton	0.9842 English ton
1 ounce	28.35 grams
1 pound	0.4536 kilogram
1 English ton	1.0160 metric tons

APPROXIMATE METRIC EQUIVALENTS

1 decimeter	4 inches
1 meter	1.1 yards
1 kilometer	⅝ of mile
1 hectare	2½ acres
1 stere, or cu. meter	¼ of a cord
1 liter	1.06 qt. liquid or 0.9 qt. dry
1 hektoliter	2.8 bushels
1 kilogram	2.2 pounds
1 metric ton	2200 pounds

WEIGHTS OF BUILDING MATERIALS

Per Cubic Foot

MATERIAL	Lbs. Cu. Ft. WEIGHT
Asphalt-pavement composition	100
Birch	48
Bluestone	160
Brick, best pressed	150
Brick, common and hard	125
Brickwork in lime mortar, average	120
Brickwork in cement mortar, average	130
Brickwork, pressed brick, thin joints	140
Cypress	36
Fir, Douglas	36
Firebrick	150
Granite	167
Gypsum partition block (hollow)	48
Hemlock	30
Hollow tile partition block	60
Iron, cast	450
Iron, wrought	480
Limestone	155 to 172
Maple	48
Marble	171 to 179
Masonry, squared granite or limestone	165
Masonry, granite or limestone, dry rubble	138
Masonry, granite or limestone, rubble	150
Masonry, sandstone	150
Mineral wool	12
Mortar, hardened	90 to 100
Oak	48
Plaster	96
Slate	172 to 177
Spruce	30
Steel, structural	489.6
Terra cotta, solid	120
Terra cotta, masonry work	70 to 80
Tile, solid	110 to 120
Yellow pine	48

ADDENDA
WEIGHTS OF BUILDING MATERIALS

ASBESTOS	153-192 lbs. per cu. ft.
BRICK (Common)—2¼"x4"x8¼"	5.4 lbs. each; 2.7 tons—M.
BRICK (Fire) (Standard)— 9"x4½"x2½"	7.0 lbs. each; 3.5 tons—M.
BRICK (Hard)— 2¼"x4¼"x8½"	6.48 lbs. each; 3.24 tons—M.
BRICK (Paving)— 2¼"x4"x8½"	6.75 lbs. each; 3.37 tons—M.
BRICK (Paving Block)— 3¼"x4"x8½"	8.75 lbs. each; 4.37 tons—M.
BRICK (Soft)—2¼"x4"x8¼"	4.32 lbs. each; 2.6 tons—M.
CEMENT	Bag—94 lbs.; Barrel—376 lbs.
CLAY (Dry)	63-95 lbs.—cu. ft.; 1700-2295 lbs.—cu. yd.
CLAY (Fire)	130 lbs.—cu. ft.; 3510 lbs.—cu. yd.
CLAY (Wet)	120-140 lbs.—cu. ft.; 2970-3200 lbs.—cu. yd.
CONCRETE	138 lbs.—cu. ft.; 3726 lbs.—cu. yd.
CONCRETE:	
Cinder concrete	112 lbs. per cu. ft.
Gravel and Limestone concrete	150 lbs. per cu. ft.
Trap-rock concrete	155 lbs. per cu. ft.
CRUSHED STONE	100 lbs.—cu. ft.; 2700 lbs.—cu. yd.
GRAVEL	95 lbs.—cu. ft.; 2565 lbs.—cu. yd.
HYDRATED LIME	About 40 lbs. per cu. ft.
LIME	75 lbs.—bu.; 320 lbs.—bbl. large; 220 lbs.—bbl. small.
MORTAR	103 lbs. per cu. ft.
PLASTER OF PARIS	98 lbs. per cu. ft.
REINFORCED CONCRETE	150 lbs. per cu. ft.
SAND (Dry)	97-117 lbs.—cu. ft.; 2619-3159 lbs.—cu. yd.
SAND (Wet)	120-140 lbs.—cu. ft.; 3240-3780 lbs.—cu. yd.
SHINGLES: Approximately 250 per bundle 24" long, 20" wide, 10" high	50 lbs.
SLAG	65-70 lbs. per cu. ft.; 1755-1890 lbs. per cu. yd.
SLAG CONCRETE	135 lbs. per cu. ft.
STONE RIPRAP	65 lbs.—cu. ft.; 1775 lbs.—cu. yd.

TO HELP YOU SOLVE CONSTRUCTION AND MAINTENANCE PROBLEMS

For every surface that needs protection against wear and weather, for every problem of floor treatment, and for every phase of roof maintenance, there are Sonneborn "Building Savers" that not only do the job and do it well, but make the work of maintaining buildings simpler and more effective.

New construction, too, goes up faster and more easily—stands up longer . . . with the aid of Sonneborn "Building Savers".

Sonneborn is prepared to render specific help in solving problems which inevitably arise when new buildings are erected or old structures show signs of wear and deterioration. Experience gained through more than 40 years of service, plus a staff of trained technical men and laboratory technicians, qualify the Sonneborn organization to act as consultants on any building or maintenance problem.

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